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PAYMENT FOR PHYSICIAN SERVICES

Strategies for Medicare

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Foreword

Medicare coverage of physician services for elderly and disabled beneficiaries improves their financial access to medical care. But Medicare's payment methods have also fueled increases in expenditures for physician services, which are now one of the most rapidly growing parts of the Federal budget. The method of customary, prevailing, and reasonable charge payment is inherently inflationary and contains incentives for providers to use additional and more expensive services.

To curtail continuing increases in expenditures for physician services, the Deficit Reduction Act of 1984 (Public Law 98-369) froze physician charges to Medicare beneficiaries for 15 months beginning July 1, 1984. That act also mandated OTA to examine alternative methods of paying for physician services in order to guide payment reform. The House Energy and Commerce Committee, the House Ways and Means Committee, and the Senate Finance Committee have jurisdiction over physician services under Medicare and that section of the act. The Senate Special Committee on Aging also requested OTA to study the effect of physician payment methods on the use of medical technology.

In preparing this report, OTA staff drew on the expertise of members of the advisory panel, members of the OTA Health Program Advisory Committee, and experts in medicine, economics, insurance, industry, and health policy. Drafts of the final report were reviewed by the advisory panel, chaired by Dr. Sidney S. Lee; OTA's Health Program Advisory Committee, also chaired by Dr. Lee; and numerous individuals and organizations with expertise and interest in the area. We are grateful for their assistance. Key OTA staff involved in the analysis were Jane E. Sisk, Charles L. Betley, Polly M. Ehrenhaft, Peter McMenamin, Elaine J. Power, Gloria Ruby, Ellen S. Smith, and Kerry Britten Kemp.

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List of Related OTA Reports

- *Medicare's Prospective Payment System: Strategies for Evaluating Cost, Quality, and Medical Technology.*
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Glossary of Acronyms and Terms

Glossary of Acronyms

AAFP —American Association of Family Physicians
AAPCC —average adjusted per capita cost
AARP —American Association of Retired Persons
ACIP —Immunization Practices Advisory Committee (CDC)
ACP —American College of Physicians
ACR —adjusted community rate
ACS —American College of Surgeons
AHCCCS —Arizona Health Care Cost Containment System
AMA —American Medical Association
ASC —ambulatory surgical center
ASIM —American Society of Internal Medicine
BC/BS —Blue Cross and Blue Shield Association
CBO —Congressional Budget Office (U.S. Congress)
CFR —Code of Federal Regulations
CHAMPUS —Civilian Health and Medical Program of the Uniformed Services (Department of Defense)
CMP —competitive medical plan
CPI —Consumer Price Index
CPR —customary, prevailing, and reasonable
CPT-4 —Current Procedural Terminology, 4th Edition
CT —X-ray computed tomography
DHHS —U.S. Department of Health and Human Services
DRG —diagnosis-related group
ESRD —end-stage renal disease
ESWL —extracorporeal shock wave lithotripsy
FDA —Food and Drug Administration (DHHS)
FR —Federal Register
FTC —U.S. Federal Trade Commission
GAO —General Accounting Office (U.S. Congress)
GMENAC —Graduate Medical Education National Advisory Committee
GNP —Gross National Product
HCFA —Health Care Financing Administration (DHHS)
HCPCS —HCFA's Common Procedure Coding System
HMO —health maintenance organization
HRSA —Health Resources and Services Administration (Public Health Service, DHHS)
ICD-9-CM —International Classification of Diseases, 9th Revision, Clinical Modification
ICU —intensive care unit
IOL —intraocular lens
IMC —International Medical Centers, Inc.
IPA —individual practice association
MEI —Medicare Economic Index
MRI —magnetic resonance imaging
OTA —Office of Technology Assessment (U.S. Congress)
PPO —preferred provider organization
PRO —(utilization and quality control) peer review organization
ProPAC —Prospective Payment Assessment Commission
PSRO —professional standards review organization
RVS —relative value scale
TEFRA —Tax Equity and Fiscal Responsibility Act of 1982 (Public Law 97-248)
UCR —usual, customary, and reasonable

Glossary of Terms

Access: Potential and actual entry into the health care system.

Actual charge (Medicare): The charge billed by a physician or other supplier of Medicare Part B medical services. Along with the provider's customary charge and the prevailing charge in the locality, the actual charge is used to determine approved charges.

Allowed charge (Medicare): See approved charge.

Ambulatory services: Medical services provided to patients who are not hospitalized.

Ancillary services or technology: Medical technology or services used directly to support basic clinical services, including diagnostic radiology, radiation therapy, clinical laboratory, and other special services.

Approved charge (Medicare): An individual charge determination made by a Medicare carrier on a covered Part B medical service or supply. In the absence of unusual medical circumstances, it is the lowest of: 1) the physician's or supplier's customary charge for that service, 2) the prevailing charge for similar services in the locality, 3) the actual charge made by the physician or supplier, and 4) the carrier's private business charge for a comparable service. Also called allowed charge or reasonable charge.

Assignment (Medicare): An agreement by a provider (physician or supplier) to accept a Medicare beneficiary's rights to benefits under Supplementary Medical Insurance (Part B), to bill the Medicare carrier rather than the patient, and to accept Medicare's approved charge paid by the carrier as payment in full (excluding the beneficiary's 20-percent coinsurance and the deductible). The provider may then bill the beneficiary only for the coinsurance and any applicable deductible.

Average adjusted per capita cost (AAPCC): As defined under the Tax Equity and Fiscal Responsibility Act of 1982 (Public Law 97-248), the AAPCC is the estimated average per capita amount that Medicare would pay if covered services for Medicare competitive medical plan (CMP) members were furnished in local fee-for-service practices. The AAPCC formula consists of the product of three major components: 1) the U.S. per capita Medicare cost as projected to the current year; 2) an adjustment based on the historical relationship between national Medicare costs and Medicare per capita reimbursements in the local area that a CMP serves; and 3) an adjustment for the differences between persons who choose to enroll in a CMP and the Medicare population at large from which CMP enrollees are drawn.

Billed charge (Medicare): See actual charge.

Capitation payment: A method of paying for medical care by a prospective per capita payment that is independent of the number of services received.

Carrier (Medicare): Organizations, typically Blue Shield plans or commercial insurance firms, under contract to the Health Care Financing Administration for administering Part B of the Medicare program. Their tasks include computing reasonable charges for physician services, making actual payments, determining whether claims are for covered services, denying claims for noncovered services, and denying claims for unnecessary use of services.

Case mix: A measure of the mix of cases being treated by a particular health care provider that is intended to reflect the patients' different needs for resources. Case mix is generally established by estimating the relative frequency of various types of patients seen by the provider in question during a given time period and may be measured by factors such as diagnosis, severity of illness, utilization of services, and provider characteristics.

Coinsurance: That percentage of covered hospital and medical expenses, after subtraction of any deductible, for which an insured person is responsible. Under Medicare Part B, after the annual deductible has been met, Medicare will generally pay 80 percent of approved charges for covered services and supplies; the remaining 20 percent is the coinsurance, which the beneficiary pays.

Competitive medical plan (CMP): A health plan option available to Medicare beneficiaries that provides physicians' services, laboratory, X-ray, emergency, and preventive services, and inpatient hospital services, assumes risk for the provision of the required services and out of area coverage, and meets certain requirements to assure financial solvency. Such a plan is eligible to enter into a Medicare risk contract in return for a capitation payment under the Tax Equity and Fiscal Responsibility Act of 1982 (Public Law 98-248).

Cost-sharing: That portion of the payment to a provider of health care services that is the initial liability of the patient and that may include deductibles, copayments, coinsurance, and under Medicare Part B, unassigned liability. Also, the general set of financial arrangements under which health care insurance is contingent on a purchaser's acceptance of the obligation to pay some portion of the reimbursements for those services.

Current Procedural Terminology, 4th Edition (CPT-4) Coding: A taxonomy of procedures performed by physicians that is used for recording and billing for services rendered. This taxonomy has been incorporated in the HCFA Common Procedure Coding system, which all Medicare carriers are now required to use.

Customary charge (Medicare): In the absence of unusual medical circumstances, the maximum amount the a Medicare carrier will approve for payment for a particular service provided by a particular physician practice. The customary charge is computed by the carrier based on actual charge data for a specific service performed by one physician (practice or supplier) to his or her patients in general.

Customary, prevailing, and reasonable (CPR) method (Medicare): The method used by Medicare carriers to determine the approved charge for a particular Part B service from a particular physician or supplier. Under this method, the approved charge is limited to the lowest of the physician's actual charge for the service, the physician's customary charge for the service, and charges by peer physicians or suppliers in the same locality. If necessary, prevailing charges are adjusted by the Medicare Economic Index.

Deductible: An initial expense of a specified amount of approved charges for covered services within a given time period (e.g., $75 per year) payable by an insured before the insurer assumes liability for any additional costs of covered services. The Part B deductible is the portion of approved charges (for covered services each calendar year) for which a beneficiary is responsible before Medicare assumes liability.

Diagnosis-related groups (DRGs): Entries in a taxonomy of types of hospitalizations based on groupings of diagnostic categories drawn from the International Classification of Diseases and modified by the presence of a surgical procedure, patient age, presence or absence of significant morbidities or complications, and other relevant criteria. DRGs have been mandated for use in establishing payment amounts for individual admissions under Medicare's prospective hospital payment system as required by the Social Security Amendments of 1983 (Public Law 98-21).

Extracorporeal shock wave lithotripsy (ESWL): A technique for the disintegrating of upper urinary tract stones that uses shock waves generated outside a patient's body and does not require a surgical incision.

Fee-for-service payment: A method of paying for medical care in which each service perfomed by an individual provider can bear a related charge.

Fee schedule: An exhaustive list of physician services in which each entry is associated with one specific monetary amount representing the approved payment for a given insurance plan.

Fee screen: A limit used to determine an insurer's approved charge for a particular physician service, such as under Medicare the physician's customary charge or the locality prevailing charge for the service in question.

Fee screen year: The calendar period during which a particular year's CPR limits are in effect. As of September 30, 1984, fee screen years run from October 1 through September 30 of the following calendar year, with fee screen year 1985, for example, beginning on October 1, 1984 and ending on September 30, 1985. Prior to the Deficit Reduction Act of 1984 (Public Law 98-369), fee screen years began on July 1 of a calendar year and continued through June 30 of the next year.

Fiscal intermediary: An organization that acts as an agent and purchaser of health care insurance or health care services for insureds.

Health maintenance organization (HMO): A health care organization that acts as both insurer and provider of comprehensive but specified medical services. A defined set of physicians provides services to a voluntarily enrolled population for a prospective per capita amount (i.e., by capitation). Prepaid group practices and individual practice associations are types of HMOs.

Individual practice association (IPA): A type of HMO whose physicians usually practice in private offices and are paid by the HMO on a fee-for-service basis. Members, however, pay the HMO for coverage through capitation payments.

Inpatient services: Services provided to patients who are hospitalized.

Intermediaries (Medicare): Organizations, typically Blue Cross plans or commercial insurance firms, under contract to the Health Care Financing Administration for administering Part A of the Medicare program. Their tasks include determining reasonable costs for covered items and services, making payments, and guarding against unnecessary use of covered services for Medicare Part A payments. Intermediaries also make payments for home health and outpatient hospital services covered under Part B.

Locality (Medicare): For the purpose of making Medicare approved charge determinations, a locality is identified as a geographic area for which a carrier derives the prevailing charges for services. Usually, a locality is a political or economic subdivision of a State include a cross-section of the population with respect to economic and other characteristics.

Magnetic reasonance imaging (MRI): An imaging technique based on the physical response of atomic nuclei to imposition of a forceful external magnetic field, and hence not requiring the ionizing radiation associated with X-ray technologies.

Managerial technology: Technology used to facilitate and support the provision of health care services but not directly associated with patient care, including administration, transportation, and communication, both within and among health care facilities.

Mandatory assignment: An alternative to the present system of Medicare assignment. Under a system of mandatory assignment, only those services for which a physician had agreed to accept the Medicare determination of approved charges as payment in full would be reimbursable. A beneficiary who received a service from a physician who did not agree to accept the Medicare approved charge as payment in full would not be able to be reimbursed for that service under a policy of mandatory assignment.

Medical technology: The drugs, devices, and medical and surgical procedures used in medical care, and the organizational and support systems within which such care is provided.

Medicare Economic Index (MEI): The index that the Medicare program uses to set limits on physicians' prevailing charges. The MEI is based on estimates of the costs of producing physician office services and a measure of increases in earning levels in the general economy, as specified by the Social Security Amendments of 1972 (Public Law 92-603).

Medigap insurance: Private supplementary medical insurance covering out-of-pocket expenditures of Medicare beneficiaries such as deductibles and coinsurance, but typically not covering unassigned liability for physician services provided under Part B.

Nonassigned liability: See unassigned liability.

Nonparticipating physician (Medicare): A physician practice that has not elected to become a Medicare participating physician, i.e., one that has retained the right to accept assignment on a case-by-base basis. Compare participating physician.

Nonprocedural service: A service, such as an office visit, that may involve but does not depend in a major way on a medical device.

Opportunity cost: In economics, defined as the return available from the best alternative use of a particular resource, for example, the value of the other products that might otherwise have been produced by the resources used in the production of a particular good or service. Any single opportunity taken will have a cost in terms of an opportunity forgone.

Packages of services: Groups of related physician services or functions that have either uniform content or expected therapeutic effect, or that involve sets of alternative, commonly performed but not required services complementary to a particular major physician service.

Part A (Medicare): Medicare's Hospital Insurance program, which provides insurance benefits against the costs of hospital and related posthospital services for elderly and disabled beneficiaries. Part A, which is an entitlement program for those who are eligible, is available without payment of a premium, although the beneficiary is responsible for an initial deductible or copayment for some services. Those not automatically eligible for Part A may enroll in the program by paying a monthly premium.

Part B (Medicare): Medicare's Supplementary Medical Insurance program, which provides insurance benefits for medically necessary physician services, hospital outpatient services, ambulatory physical therapy and speech pathology services, comprehensive rehabilitation facility services, and various other limited ambulatory services and supplies, such as prosthetic devices and durable medical equipment. Part B also covers home health services for those Medicare beneficiaries who have Part B coverage only. Enrollment in Part B is optional and requires payment of a monthly premium. The beneficiary is also responsible for a deductible and a coinsurance payment for most covered services.

Participating physician (Medicare): A physician practice that has elected to provide all Medicare Part B services on an assigned basis for a year. In return for forgoing the right to bill for Part B services on a unassigned basis, the participating physician is listed in a directory of participating physicians available to beneficiary organizations and may receive greater increases in Medicare approved charges than nonparticipating physicians.

Preferred provider organization (PPO): A form of health care delivery system in which an agreement is made between providers and purchasers that patients who seek medical care from the "preferred providers" will obtain benefits such as reduced cost sharing. In return for the potential increase in volume of patients, the preferred providers may agree to discount their charges or to submit to enhanced utilization review.

Prepaid group practice: A type of HMO consisting of group practice that provides or arranges comprehensive covered services for enrollees, who pay by capitation.

Prevailing charge (Medicare): In the absence of unusual medical circumstances, the maximum amount a Medicare carrier will approve for payment for a particular service provided by any physician practice within a particular peer group and locality. Generally, this amount is equal to the lowest charge in an array of customary charges that is high enough to include 75 percent of all the relevant customary charges.

Procedural service: A service, such as endoscopy, that is dependent in a substantial way on the use of a medical device.

Prospective payment: Payment for medical care on the basis of rates established in advance of the time period in which they apply. The unit of payment may vary from individual medical services to broader categories, such as hospital case, episode of illness, or person (capitation).

Prospective Payment Assessment Commission (ProPAC): A commission established by the same law that created the DRG-based prospective payment system for Medicare (Public Law 98-21) to make recommendations to the Secretary of Health and Human Services on the annual update factor and on adjustments of DRG classifications and weights.

Quality of care: The degree to which actions taken or not taken maximize the probability of beneficial health outcomes and minimize risk and other untoward outcomes, given the existing state of medical science and art.

Quality assurance: Integrated programs that attempt to protect or raise quality of care by conducting assessments, taking action to correct problems found, and following up with corrective interventions.

Reasonable charge (Medicare): See approved charge.

Relative value scale (RVS): A list of all physician services containing a cardinal ranking of those services with respect to some conception of value, such that the difference between the numerical rankings for any two services is a measure of the difference in value between those services.

Third-party payment: Payment by a private insurer or government program to a medical provider for care given to a patient.

Unassigned liability: The difference, if any, between a physician's actual charge for a service on an unassigned claim and the Medicare approved charge for that service.

Usual, customary, and reasonable charges (UCR): In private health insurance, the bases for reasonable charge reimbursement of physicians. This approach was developed in the early 1960s somewhat before the introduction of Medicare, and was adapted by Medicare as the model for CPR. "Usual" refers to the individual physician's fee profile, equivalent to Medicare's "customary" charge screen. "Customary," in this context, refers to a percentile of the pattern of charges made by physicians in a given locality (comparable to Medicare's "prevailing" charges). "Reasonable" is the lesser of the usual or customary screens.

Chapter 1

Summary and Policy Options

> There's always an easy solution to every problem—neat, plausible, and wrong.
>
> —*H.L. Mencken*

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Chapter 1

Summary and Policy Options

INTRODUCTION

In an era of concern about Federal budget deficits, the growth and size of Medicare expenditures on physician services have made this sector an obvious target for constraining outlays. During the 1980s, Medicare expenditures for physician services have risen at an average rate of 16 percent per year and in fiscal year 1985 reached an estimated $19 billion. For 1985, Medicare's Supplementary Medicare Insurance (Part B) program, which includes physician expenditures,[1] was estimated to be the fourth largest domestic program in the Federal budget, following Social Security, Medicare's Hospital Insurance (Part A) program, and Medicaid[2] (401,553).

Important policy concerns apart from rising Medicare expenditures are at issue. There are indications that medical care is not being provided efficiently—that more or fewer resources than appropriate are being used to manage medical conditions and that the benefits gained from additional services may not be worth their costs. Wide variations exist in the use of physician and hospital services that cannot be explained by differences among populations (568). Observers have concluded that some technologies, such as vaccines, have been underused (397). On the other hand, populations with lower use of hospitalization and associated physician services have suffered no apparent ill effects over time (65, 279,285).

To some extent, the present situation stems from the fact that medicine is not an exact science. Alternatives exist for the management of many medical conditions, and physicians use their expertise and judgment to determine the medical care for particular patients. Given the discretion that physicians exercise and the lack of definitive information available to clinicians concerning the efficacy and cost-effectiveness of medical technologies, it is perhaps not suprising that there are substantial variations in practice patterns.

But past policies regarding health insurance coverage and payment methods have also played a major role in rising medical expenditures. In general, health insurance dulls the sensitivity of consumers, physicians, and other providers to the financial implications of using medical care (137). With existing levels of cost-sharing, elderly Medicare beneficiaries in general are likely to be sensitive to the cost of using medical care. But coverage and beneficiary cost-sharing vary across settings and technologies. Both elderly Medicare beneficiaries and their physicians are likely to be less sensitive to the cost of technologies that have more nearly complete Medicare coverage. Routine checkups are statutorily excluded from coverage, for example, while physician services for certain surgery performed in designated ambula-

Photo credit: Merck, Sharp, & Dohme

Pneumococcal vaccination, shown here, is the only preventive service covered by Medicare for all beneficiaries.

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[1] Medicare's Part B program covers physician, home health, and ambulatory services. Eligibility for Social Security benefits determines entitlement for coverage of Part A, which pays for hospital and related post-hospital services. People eligible for Part A and U.S. residents over age 65 may enroll in Part B. Enrollees pay a monthly premium, a deductible, and 20 percent of the charges allowed by Medicare (493). In fiscal year 1984, physicians' services accounted for 85 percent of Part B expenditures (553).

[2] Expenditures for national defense and net interest also exceeded those for Part B in 1985 (470).

tory surgical centers or hospital outpatient settings is reimbursed at the rate of 100 percent of approved charges. Although Medicare's payment policies for ambulatory surgery are intended to encourage physicians and beneficiaries to use less costly settings, in some cases, program expenditures for ambulatory surgery have exceeded the amount that Medicare would have paid for an inpatient case (161).[3]

Overall, Medicare pays 45 percent of the medical expenses of its elderly beneficiaries; this includes 74 percent of their hospital expenses and 55 percent of their physician expenses, but a much smaller percentage of their other medical expenses (551). About 65 percent of elderly people outside of institutions have private insurance to supplement their Medicare coverage. Despite Medicare and other coverage, elderly people still bear substantial medical expenses; in 1984, elderly people spent an estimated 15 percent of their average income on out-of-pocket costs for health care, the same percentage as in 1966 before Medicare was fully implemented (495).

Medicare's traditional payment methods for physician services, like those of other payers, have provided incentives for physicians to provide additional services, regardless of the additional benefit to be gained by beneficiaries. Medicare pays physicians and other Part B providers a fee for each service performed. This fee-for-service payment method places the financial risk for the care provided on the Medicare program and the beneficiary, not on the physician. With fee-for-service payment, physicians have an incentive to perform additional services, provided that the additional revenue they receive exceeds their costs.[4] Because much uncertainty exists in medicine and physicians must exercise discretion in their clinical decisions, there is much room for them to recommend additional followup visits or procedures within the bounds of accepted medical practice.

Medicare's payment rates are based on what physicians have charged in the past, a system that is inherently inflationary (262). Under Medicare's customary, prevailing, and reasonable (CPR) payment method, the Medicare approved charge[5] is limited to the lowest of a physician's billed charge, the customary charge for that service based on that physician's prior billings, and the prevailing charge for that service based on comparable physicians' prior billings for the same service. An additional limit on the prevailing charge for a service is set by the Medicare Economic Index, which measures changes in practice expenses and general earnings.

Depending on whether the physician "accepts assignment," either the Medicare administrative carrier[6] or the beneficiary pays the physician. The beneficiary, after having met the annual deductible, is entitled to have Medicare pay 80 percent of the approved charge for a Part B service. If the physician accepts assignment, she or he accepts Medicare's approved charge as payment in full and may collect only the beneficiary's 20-percent coinsurance and any remaining deductible from the beneficiary. If the physician does not accept assignment, the beneficiary is liable for any difference between the physician's actual charge and Medicare's approved charge (the beneficiary's unassigned liability), plus the coinsurance and any deductible.

Since October 1, 1984, physicians have been able to become Medicare "participating physicians" by agreeing to accept assignment for all Medicare claims for the next 12 months. From July 1, 1984 to October 1, 1985, the customary and prevailing charges of all physicians and the billed charges of "nonparticipating" physicians were frozen. In the absence of passage of Medicare's authorization for fiscal year 1986, Congress in December 1985 temporarily extended the freeze to March 15, 1986.

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[3] On October 1, 1983, Medicare began phasing in a prospective payment system for beneficiaries' inpatient care. Under this system of payment according to diagnosis-related groups (DRGs), Medicare pays a fixed amount based on diagnosis for the operating costs of beneficiaries' inpatient admissions.

[4] "Cost" here refers to the physician's expenses of resources used in the course of providing a service. The physician's cost includes his or her "opportunity cost," that is, the payment that the physician could obtain for other activities, such as performing another service for another patient. In contrast to cost, price or approved charge refers to the revenue that a physician receives for a service.

[5] The terms approved charge, reasonable charge, and allowed charge are used interchangeably to connote the amount that Medicare pays for a specific physician service. After the beneficiary has paid an annual deductible, Medicare pays 80 percent of the approved charge, and the beneficiary is responsible for 20 percent.

[6] To administer Part B, Medicare contracts with private organizations termed carriers, which are primarily insurance companies that also have private lines of business.

Like the use of the service as the unit of payment, the structure of relative fees under the CPR payment method has not contained incentives for the efficient provision of medical care. Medicare, as well as most private third-party payers, has historically paid higher rates for urban, specialist, and inpatient services than for rural, generalist, and ambulatory services. Medicare has also rewarded services dependent on equipment more highly than historytaking and counseling (227,424).

The Deficit Reduction Act of 1984 (Public Law 98-369), which established the participating physician program and froze physician charges to Medicare beneficiaries, also mandated OTA to examine different ways of paying for physician services under Medicare. The act specified that OTA was to pay particular attention to the following topics: any inequities in relative payments by type of service, locality, and specialty or in relative payments between procedural and nonprocedural services; incentives for providers to accept assignment; the effects of alternative payment methods and levels on the use of services; and possible methods to develop fee schedules. The House Energy and Commerce Committee, the House Ways and Means Committee, and the Senate Finance Committee have jurisdiction over Medicare Part B and this section of the law. In addition, the Senate Special Committee on Aging requested OTA to study the effect of physician payment methods on the use of medical technology.

SCOPE OF THE STUDY

This report uses the term "physician services" for services that are commonly provided by physicians but are sometimes provided by other professionals or organizations.[7] Clinical laboratory tests, for example, may be performed in a physician's office, an independent clinical laboratory, or a hospital laboratory. Similarly, refraction and fitting of corrective lenses may be provided by physicians, such as ophthalmologists, or by other professionals, such as optometrists. Furthermore, some of the alternative payment methods that are considered in this report entail payments for the institutional as well as the physician portion of inpatient care.

This report uses OTA's definition of medical technology: the drugs, devices, medical, and surgical procedures used in medical care, and the organizational and supportive systems within which such care is provided.

The problems with Medicare's current system of paying for physician services are examined in chapter 2, and chapter 3 presents a framework for evaluating alternative methods of payment to deal with these problems. Subsequent chapters focus on the analysis of specific payment alternatives: modifications to Medicare's customary, prevailing, and reasonable (CPR) charge payment (ch. 4); payment based on fee schedules (ch. 5); payment for packages of services (ch. 6); and capitation payment (ch. 7).

The remainder of this chapter summarizes these topics and presents policy options for Congress to address the problems identified and to pursue strategies culminating in different payment reforms. Appendix A describes the method of conducting the study; appendix B acknowledges the valuable assistance of several individuals; and appendixes C and D present background information on topics related to but broader than Medicare, Medicaid, and private sector approaches to paying for physician services. In addition to the main report, a case study on extracorporeal shock wave lithotripsy (ESWL) is being published in connection with this assessment.

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[7] The Social Security Act defines "physicians' services" as professional services performed by doctors of medicine, osteopathy, dentistry, podiatry, and optometry; and chiropractors (Section 1861 (r)). In addition, health maintenance organizations and competitive medical plans may furnish the services of certain other health professionals without the direct supervision of a physician: physician assistants, nurse practitioners, and clinical psychologists (50 FR 1351, 42 CFR 417.416).

PHYSICIAN PAYMENT UNDER MEDICARE: PROBLEMS AND CHANGING CONTEXT

The Medicare program is intended to help elderly and disabled people meet their medical expenses. Expressed as the missions of the program, this goal entails promoting the delivery of quality health care services to beneficiaries, making those services accessible to them, and doing so in a manner that is consistent with the cost-effective delivery of services within both Medicare and the general U.S. health care system (491,508).

Over the life of the program, *per capita* Medicare expenditures for physician services have risen at roughly the same rate as increases for the United States; however, since 1978 and especially since 1982, per capita Medicare expenditures for physician services have risen more rapidly than expenditures for the Nation as a whole. Although growth slackened in 1984, *total* expenditures for Medicare's Part B program are expected to continue to rise by almost 14 percent per year through fiscal year 1990 (401). Increases in the beneficiary population have accounted for only a minor part of this growth. From 1976 to 1982, Medicare expenditures for physician services for elderly people increased 18 percent per year—2 percent from enrollment increases, 10 percent from price increases, and 6 percent from increases in the number of services per enrollee (133). Claims per beneficiary have risen continuously throughout the history of Medicare, from 1.1 in 1967 to 7.9 in 1984 (527).

There is substantial variation in aspects of Medicare payment, including assignment rates, annual expenditures per beneficiary, and relative rates paid for certain services. This variation, discussed further below, may be indicative of problems regarding quality, access, and efficiency. But substantial variation is to be expected within a national program serving over 30 million beneficiaries in thousands of local markets, and little or no consensus exists regarding whether specific variations signify problems.

Across the United States, assignment rates vary from 17 percent for elderly people in South Dakota to 87 percent in Rhode Island (296). Differences in assignment rates affect beneficiaries' out-of-pocket costs. For the claims of elderly beneficiaries, assignment rates increase with the age of the beneficiary, but for disabled people, assignment rates have been highest for the youngest age group. Assignment rates also rise substantially for higher bills. In general, the data are consistent with the hypothesis that physicians accept assignment more readily when there is a greater risk of incurring a bad debt.

Although Medicare's Part B program is a national program funded through general revenues and beneficiary premiums and deductibles are uniform across the country, Medicare's payments on behalf of beneficiaries vary considerably. Across the United States, there is more than a twofold variation by carrier jurisdiction[8] in Medicare expenditures per beneficiary for physician and other medical services (525). This variation depends on the proportion of beneficiaries who exceed the Medicare deductible and are thus eligible for reimbursement; that proportion, in turn, depends on variations in health, service volume, physicians' charges, and the stringency with which Medicare carriers determine approved charges.

Compared to beneficiaries in States with high approved charges, beneficiaries in States with low approved charges have to receive more services to meet the deductible and qualify for program payments. On the other hand, for a given volume of services, beneficiaries in States with lower approved charges may have lower out-of-pocket expenses. Even within a national program, provision of a uniform real level of benefits requires that Medicare pay different prices across jurisdictions to reflect different practice costs.

Within States, variations generally reflect disparities in payment levels between urban and rural areas. Under the Social Security Act, Medicare carriers are given discretion in identifying localities for payment purposes. Because of this carrier discretion, the entire State is the locality for 18 States, while Michigan has 2, Pennsylvania has 4, and Texas has 32 localities. Across localities, the range in charges for specific services is often great. In 1980, the highest prevailing charge exceeded the lowest by 159 percent for cataract removal and by 536 percent for chest X-rays (494). Even after adjustment for cost-of-living differences, great variations continue to exist (50), but the costs of operating practices of equivalent size and style are not available. To the extent that differences in approved charges exceed differences across local market areas, reducing the number of localities for charge determination is a reasonable goal.

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[8] In fiscal year 1984, the 58 jurisdictions across the United States were administered by 40 carriers (535).

Carriers also differ across the United States in their use of physician specialty to determine approved charges for services. Four carriers make no distinction among physician specialties (473), while the carrier for Pennsylvania has had 58 different groups. For many services, prevailing charges are specialty specific regardless of carrier policy, because one specialty typically performs a certain procedure. Few cataract removals, for example, are performed by physicians who are not ophthalmologists. Specialty-specific determinations may have the most effect on approved charges for physician visits, which are performed by many different specialties and account for about half of all physician services provided to beneficiaries. The justification for recognizing higher approved charges for specialists compared to generalists is that specialists provide either higher quality or different services. Some evidence suggests that higher quality care is provided by physicians practicing in the area of medical care for which they were trained (so called "modal specialists") (370). The difficulty arises in determining in specific cases when services, mainly visits, performed by specialists and generalists constitute similar services and when a specialist or generalist is the modal specialist and deserves higher payment. There is no empirical literature to guide determinations for specific cases.

Medicare payment for physician visits also varies by the site of service, with a hospital visit paid more than a nursing home visit, and a nursing home visit paid more than an office visit (494). In 1982, average prevailing charges were 11 to 32 percent higher for inpatient visits than for office visits. Since physicians do not pay hospitals for the use of their facilities, these differences suggest an incentive for physicians to favor the hospital as the site of care. However, the nomenclature of physician services may be misleading in this instance. A limited inpatient visit may differ from a limited office visit because inpatients are usually sicker and may require more physician time and skill.

Large differences appear to exist in relative approved charges for procedural services such as endoscopy, which depend in a major way on the use of medical devices, and nonprocedural services such as office visits, which use medical devices only incidentally.[9] One study reported that after adjustment for such factors as training, resource cost, and service complexity, physicians were paid as much as four to five times more per hour for inpatient surgery than for office visits (227). Within the office, the lack of additional payment for such primary-care services as historytaking or nutritional counseling contrasts sharply with the additional income that can be generated from, for example, providing laboratory tests, interpreting an electrocardiogram, or performing an endoscopy. In office practice, payment

Photo credit: American College of Physicians, HEALTHSCOPE film series

The lack of additional payment for primary-care services such as counseling and historytaking contrasts sharply with the additional payment for services, such as interpreting electrocardiograms, that depend greatly on medical devices.

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[9] Although procedural services are often referred to as cognitive services, both procedural and nonprocedural services use cognitive skills.

rates are such that physicians might realize greater net incomes from performing an additional diagnostic test than from seeing an additional patient (424).

The establishment and maintenance of high payment rates for equipment-embodied and surgical technologies may have contributed to payment differentials between procedural and nonprocedural services. Many technologies are priced high when new because they are complex and requre special skills to perform. Even if over the years the required physician time and other resources decline and the necessary skills become more commonplace, the initial price is maintained.

Differentials in Medicare payment rates for certain services raise the concern that they may be affecting the quality of care received by beneficiaries and the cost of care paid by Medicare and beneficiaries. Differences in net revenue to providers would be most likely to influence medical decisions for which the medically and ethically correct choice is unclear (194). The comparison involves both the net revenues from services that are substitutes for a particular patient and the physician's opportunity costs of providing services to another patient. In the case of a beneficiary who has private supplementary insurance to cover cost-sharing, the additional cost to the patient of a diagnostic procedure, such as endoscopy, may be negligible. Since the test may provide useful information and requires little time, the increase in revenue to the physician of several hundred dollars may be a strong incentive to perform the test.

Currently, beneficiaries may find it harder to obtain nonprocedural than procedural services. There is evidence that carriers have paid a lower percentage of billed charges for visits than for surgeries (247,294), that assignment rates have been lower for primary-care specialties than for surgical ones, and that beneficiary out-of-pocket payments have been a larger part of revenue associated with the Medicare program for primary-care physicians than for surgeons and radiologists (247). There is no indication, however, that beneficiaries' health has suffered from lack of access to primary-care services.

Variations in payment rates also result from the application of the Medicare Economic Index. The effect of the index varies greatly, depending on the services and specialty. In 1980 in California, the index affected almost no payments for eye exams from ophthalmologists but affected almost all payments for basic anesthesiology services from anesthesiologists (187). On the other hand, by capping prevailing charges in urban areas, the index in effect prevented urban-rural differentials from increasing (359).

The changing context of medical practice adds other considerations to an analysis of Medicare's payment policies. In recent years, physicians have felt under greater competitive pressure. In part, this sense may have come from the increases in physician supply, which has grown rapidly over the past decade and is expected to outstrip requirements for additional physician services for the rest of the century (544). The sense of greater competition may also have come from activities of employers to contain increases in health insurance premiums and of Federal and State governments to moderate increases in their health care expenditures.

Perhaps in response to these changing circumstances, innovative practice arrangements are burgeoning, and physicians are increasingly entering organizational and payment systems, such as prepaid group practices, individual practice associations, and preferred provider organizations (PPOs), that differ from traditional fee-for-service solo practice in utilization controls, payment methods, and benefit design. Although these organizations usually exert more control over the availability and use of resources than physicians would experience in solo practices, physicians in these organizations gain greater predictability in patient load, income, and practice hours. As a result of prospective hospital payment systems that Medicare and several States have adopted in recent years, hospitals have new incentives to reduce inpatient operating costs. Cutbacks in lengths of stay appear to be affecting the inpatient services that physicians perform, but payment for services in the ambulatory settings including physicians' offices has remained relatively unconstrained.

Greater Medicare expenditures can be expected as the increasing supply of physicians enables the growing demand from more numerous and more elderly beneficiaries to be realized. Because of the increasing supply of physicians, however, these providers may be more willing to accept lower prices for their services and lower increases in their incomes. To the extent that competition would lead physicians to moderate their billed charges, Medicare's present CPR system would permit the program and its beneficiaries to benefit from lower costs. But under CPR, Medicare could also experience increases in use and expenditures if physicians chose to maintain their incomes in the face of greater competition by increasing the discretionary use of services or if beneficiaries demanded more services in response to lower charges.

Recent changes in legislation and regulation have made participation in Medicare more attractive to risk-sharing health maintenance organizations (HMOs) and other competitive medical plans (CMPs), and beneficiary enrollment in HMOs mushroomed during 1985. Nevertheless, it appears that Medicare has not fully taken advantage of opportunities in the marketplace. Despite the fact that beneficiaries account for a large share of certain physician services, Medicare uses a standard formula to determine approved charges and has not attempted to negotiate discounts. Although the determination of approved charges might be considered a form of quantity discounting, one might expect greater reductions for services provided primarily to beneficiaries, such as cataract surgery. Medicare also lacks arrangements with PPOs, organizations which contract with physicians and sometimes hospitals to provide services at lower than usual rates on the expectation that patient load will be greater.

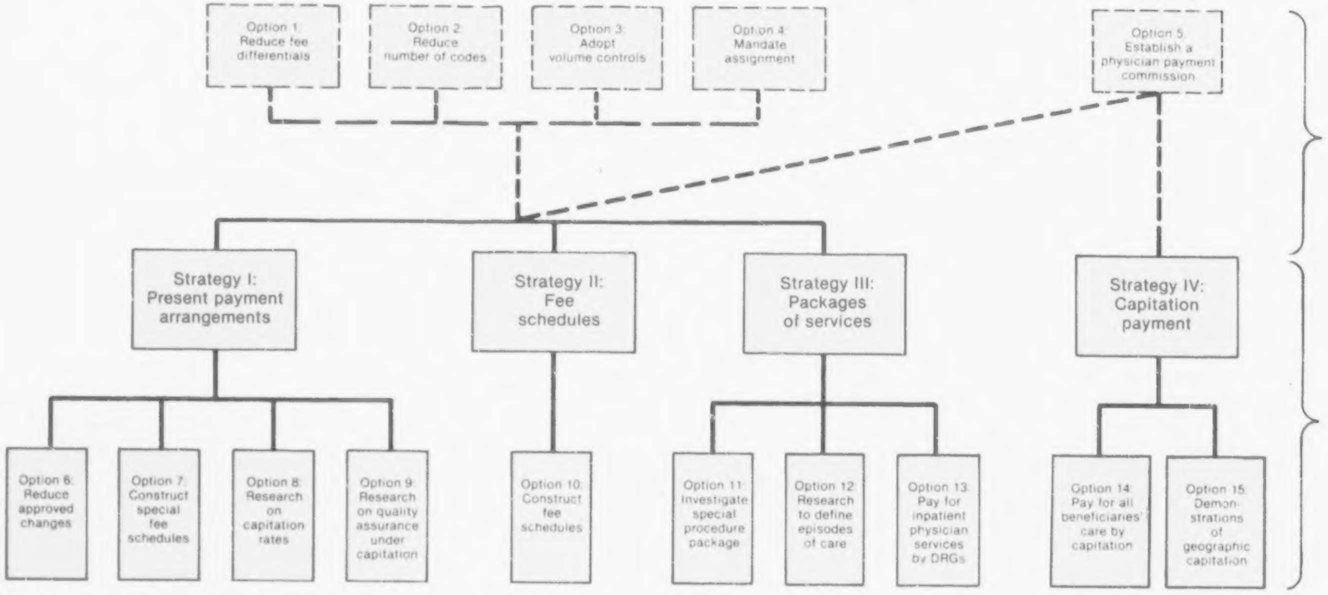
Review of Medicare's payment of physician services raises questions regarding the quality, accessibility, and efficiency of beneficiaries' medical care. It is clear that Medicare expenditures for physician services are currently unpredictable and lie largely outside the control of the program and its beneficiaries. Using fee-for-service as the method of payment and CPR as the basis for determining approved charges has been associated with continual increases in claims per beneficiary and in recent years with more rapid expenditure increases for Medicare than for the Nation as a whole. Nor does the pattern of variations in approved charges among services appear consistent with incentives for providers to deliver good quality care in an efficient manner. There is also no question that variations in payment levels have led to confusion among providers about the approved charges that they may expect for a service and among beneficiaries about their out-of-pocket expenses.

POLICY OPTIONS

To address the problems identified with Medicare's current system of paying for physician services, Congress could undertake four different strategies, depending on the payment method that Congress ultimately wished to adopt for Medicare (see figure 1-1). The first strategy would retain CPR as the mainstream payment method, but continue other payment methods in specific circumstances, such as capitation payment for beneficiaries who elected to enroll in HMOs. A second strategy would replace the CPR payment approach with payment based on fee schedules. The third strategy could be adopted if Congress wished to explore the strategy of moving to payment for packages of services on a wide scale. Under the fourth strategy, Medicare would pay for all beneficiaries' medical care by capitation payment. In addition to the four strategies, a set of general options addresses problems that are likely to continue under all of the payment alternatives that continue payment for individual or packages of services, that is, for all of the alternatives except capitation payment (see figure 1-1).

The four sets of payment alternatives vary with respect to the unit on which medical care is based. Two of the alternatives, modifications to CPR payment and payment based on fee schedules,

Figure 1-1.—Congressional Options for Medicare Payment of Physician and Other Services


Option 1: Reduce fee differentials
Option 2: Reduce number of codes
Option 3: Adopt volume controls
Option 4: Mandate assignment
Option 5: Establish a physician payment commission
Strategy I: Present payment arrangements
Strategy II: Fee schedules
Strategy III: Packages of services
Strategy IV: Capitation payment
Option 6: Reduce approved changes
Option 7: Construct special fee schedules
Option 8: Research on capitation rates
Option 9: Research on quality assurance under capitation
Option 10: Construct fee schedules
Option 11: Investigate special procedure package
Option 12: Research to define episodes of care
Option 13: Pay for inpatient physician services by DRGs
Option 14: Pay for all beneficiaries' care by capitation
Option 15: Demonstrations of geographic capitation

[a] Dashed lines indicate that the strategies below are possible with or without the adoption of these general options.

SOURCE: Office of Technology Assessment, 1985.

would continue the individual service as the unit of payment. Payment for packages of services would involve grouping related services, such as all services associated with an ambulatory visit or a special procedure, and paying for them as an aggregate unit; thus payment under the packaging approach is also based on the services provided. Capitation (per capita) payment would base payment on the number of beneficiaries enrolled in a plan. The payment alternatives take the perspective of the Medicare program and concern how Medicare could pay for physician services rather than how physicians receive payment for their work. Thus, for example, Medicare might pay an HMO a capitation payment for providing physician services to beneficiaries, but the HMO organization in turn could pay physicians on a different basis, including salary, fee-for-service, or some combination.

In addition to varying by the unit of payment, payment for physician services varies by the level of payment and the relative rate structure. All of these aspects may affect physicians' and beneficiaries' decisions about the use of specific services and total expenditures for medical care. Regardless of the unit of payment, the recipient increases revenue by increasing those units, whether they be individual services, packages of services, or beneficiaries as enrollees. It is in the financial interest of the recipient to increase the number of units only if an additional unit adds more to revenue than to costs, including the opportunity cost of using resources in other uses. And that situation depends on the level of payment and the relative rates paid for other units.

The payment alternatives in this report have been evaluated for their implications for quality of care; access to care, both financial and geographic; costs and efficiency; technological change; and administrative feasibility. The effects of alternative methods of paying for physician services are difficult to predict because of uncertainty regarding physicians' behavior, especially in the context of the present medical marketplace. Faced with a decrease in the fee for a service, physicians might respond like most suppliers and reduce the volume of services that they were willing to provide. Because of that effect, reductions in approved charges could lead to reductions in Medicare expenditures. But the possibility has been raised that physicians can induce demand for their services. In that case, total Medicare and beneficiary expenditures could rise even with a decrease in price, and utilization control would be needed to control expenditures under fee-for-service payment. Although studies have found that public health insurance programs that froze or reduced physician fees did not control expenditures (158), the empirical work is not definitive because of concomitant changes in relative charges paid by other third-payers or because of the possibility that beneficiaries may have increased their demand for services in response to lower prices.

In the dynamic situation of increasing physician supply, physicians' behavior is even more difficult to predict. Physicians are increasingly entering innovative practice arrangements that control their use of services and incomes and may be more willing to accept lower prices for their services and lower increases in their incomes. On the other hand, physicians in the United States and Canada have maintained their income levels even in the face of substantial increases in physician supply (28). It is possible that physicians would respond to general restrictions on payment rates by increasing the use of certain services, such as laboratory tests, and billing for more highly priced visit categories. In fact, such behavior may already be occurring. From 1977 to 1982, physician billing for hospital and office visits shifted markedly from lower priced categories, such as followup and generalist visits, to higher priced categories, such as initial and specialist visits (133).

Another thorny issue concerns assignment rates. The relationship between assignment rates and access of beneficiaries to medical care is not clear cut; access is not synonomous with assignment. Although assignment is intended to improve beneficiaries' financial access to care, it is possible that a beneficiary could have lower out-of-pocket expenses for services from a physician who refused assignment than from a physician who took assignment but had higher approved charges. In addition, some physicians who refuse assignment may not pursue the beneficiary for his or her unassigned liability. There are no documented problems with beneficiaries' access to care at present assignment rates. In fiscal year 1985, 30 percent of physicians who bill Medicare elected to become participating physicians (to take assignment for all claims) (518). Assignment on a case-by-case basis has been rising since the low point in 1976, when it was 50.5 percent of claims and 47.6 percent of charges (494). In fiscal year 1985, including participating physicians, the assignment rate reached 67.7 percent of claims and 67.4 percent of charges (534a). Despite the uncertainty about the desirable level of assignment rates, it is reasonable to conclude that an increase in assignment rates will improve access and a decrease will reduce access for some beneficiaries.

A related issue is physicians' willingness to accept assignment. The higher Medicare's approved charge in relation to a physician's billed charge, the more likely that physician is to accept assignment (184,317,357,402), the more services are likely to be provided to Medicare patients per capita, and the greater is the number of Medicare patients likely to be treated by that physician (188). Early information on physicians who choose to become participating physicians for fiscal year 1985 indicates that previous assignment rates and the percentage of the usual fee paid by Medicare were the most important economic variables associated with the decision to participate (94). If, as is likely, changes in Medicare payment of physician services affected the approved charges of physicians, assignment and participating physician rates would be expected to decrease in instances where approved charges had decreased and to increase in instances where approved charges had increased. The effects on beneficiaries' out-of-pocket expenses would be conflicting. A beneficiary whose physician's approved charges declined would have lower coinsurance liability. But since that physician would be less likely to take assignment or become a participating physician, the beneficiary would be likely to face higher unassigned liability. One would expect that the change in unassigned liability would be greater than the change in coinsurance.

General Options

Reducing differentials in payment among certain services, reducing the number of codes for payment purposes, adopting other controls over volume of services, and mandating assignment are four general options that would be consistent with payment alternatives that continue to base payment on individual services or packages of services provided. Issues concerning volume of services and mandatory assignment would become more pressing if Medicare placed greater constraints on the prices paid for physician services by reducing the level of approved charges under CPR or adopting payment based on fee schedules or packages of services. Although the other four general options would be diversions on a path to capitation payment, a fifth general option, establishing a commission to advise on physician payment reform, could be consistent with either capitation or the other payment alternatives.

Option 1: Mandate the Medicare program to reduce or eliminate differentials in payment in one or more of the following categories:

- **approved charges within States,**
- **similar services provided by generalists and specialists,**
- **comparable services performed in different sites of care, and**
- **nonprocedural services (primarily visits) vs. procedural services.**

To address perceived imbalances in Medicare payment, the approved charges for the higher priced services (urban, specialist, inpatient, or procedural) could be reduced with or without raising the approved charges for the lower priced services (rural, generalist, ambulatory, or nonprocedural). In the course of reducing the variation in approved charges between procedural and nonprocedural services, Medicare could adjust approved charges for technologies whose costs have decreased over time. Medicare could also periodically review and adjust approved charges for such technologies.

Reducing the approved charges for the higher priced services would decrease assignment rates for and beneficiaries' financial access to these services. Services such as magnetic resonance imaging (MRI), which are provided by only a few physicians who have non-Medicare as well as Medicare patients, would be less accessible to beneficiaries if Medicare's payment level was much below that of private insurers (234). Access to lower priced services would be likely to increase if their approved charges were raised.

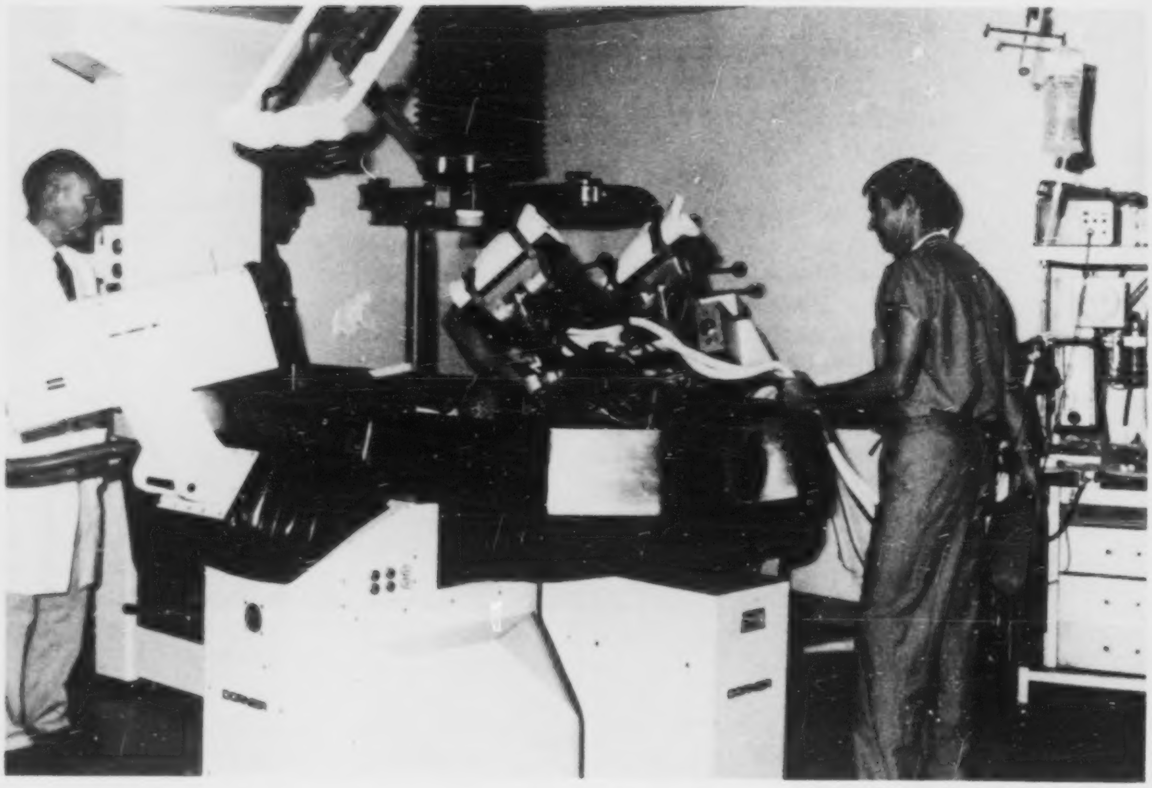


Photo credit: University of Virginia Medical Center

Medicare payment rates for expensive new technologies, such as extracorporeal shock wave lithotripsy (ESWL) being performed here, have tended to remain at their initial levels or rise, even if the costs of resources have declined.

Assignment rates are likely to fall least for physicians, such as radiologists, general surgeons, ophthalmologists, and orthopedic surgeons, whose approved charges are currently the least constrained by prevailing charge limits (247). Specialists for whom approved charges have been most constrained by prevailing charge limits, namely general practitioners, family physicians, and internists, could benefit from increases in relative payment rates for nonprocedural services. However, lowering payment rates for procedural services would affect internists whose practice involves the substantial performance of procedures such as gastroendoscopy.

There is some overlap between past levels of assignment and the extent to which prevailing charges constrained a specialty's approved changes. Radiologists have had higher assignment rates and less constraint from prevailing limits, but psychiatrists, pathologists, and pediatricians have also had high assignment rates (69). General practitioners and family physicians, with approved charges most limited by prevailing charges, have had some of the lowest assignment rates. Other specialists that have had low assignment rates are allergists, surgical specialists, and anesthesiologists (69). Medicare might exert greater leverage over physicians with a larger proportion of their practice revenue from Medicare payments. In that case, thoracic surgeons, internists, radiologists, and general surgeons would be most affected by changes in approved charges and gynecologists, psychiatrists, plastic surgeons, family physicians, orthopedic surgeons, and general practitioners the least affected (353).

Overall, lower approved charges would be likely to affect least the assignment rates of pathologists, radiologists, and some of the surgical specialists. Whether an internist's approved charges and hence assignment rate would rise or fall would depend on a particular physician's location and pattern of practice. Internists have been dependent on Medicare revenue, but have also had their approved charges more constrained by prevailing charge limits. Although the approved charges of general practitioners and family physicians have been highly constrained by prevailing charge limits, these specialties are also less dependent on Medicare revenue.

How this option would affect quality of care is unclear. Besides effects on quality through changes in access, changes in quality would depend on the appropriate level of specific services, which is often not known (568). If the use of procedural services, such as electrocardiograms, is being unduly stimulated by present payment rates, lowering approved charge levels would improve quality. The quality implications of reducing differentials for similar generalist and specialist services are further confounded by the unresolved issue of whether specialists provide higher quality care than generalists. Specialists appear to provide higher quality care when practicing within the domain of their advanced training (369,392, 398). But the evidence that physician performance per se is related to specialization is weaker (194) and contradictory (416).

The effect of this option on Medicare expenditures would depend on the changes in volume of services in response to the changes in prices, a subject that is still a matter of debate. If the volume of services provided to Medicare beneficiaries did not increase, lowering approved charges for relatively high-priced services without increasing those for relatively low-priced services would decrease total Medicare expenditures. However, if the response of physicians or beneficiaries raised the volume of services used, Medicare expenditures could rise. The effect on total Medicare expenditures of increasing approved charges for lower priced services while lowering approved charges for higher priced services is indeterminate.

With lower approved charges and no volume changes, beneficiaries' out-of-pocket expenses in the absence of mandatory assignment would increase because of lower assignment rates and greater unassigned liability, but their costs would decrease because of lower coinsurance. Since the increase in unassigned liability is likely to be greater than the decrease in coinsurance, beneficiaries' total expenses would increase. In cases where approved charges for lower priced services were raised, the decrease in unassigned liability would most likely exceed the increase in coinsurance, with the result that beneficiaries' total out-of-pocket costs for that service would decrease.

Physicians whose approved charges were lowered would be unlikely to raise their charges to non-Medicare patients. But these physicians would be likely to shift their time and provision of services to other patients for whom physician time was more highly paid. If approved charges were reduced to levels significantly below those of the non-Medicare market, physicians might choose not to participate in the Medicare program.

Option 2: Mandate the Medicare program to reduce the number of procedure codes used to pay for physician services.

The multitude of procedure codes for payment purposes (7,040) includes different codes for services that have only minimal distinctions. For example, office visits have 11 codes (new patient: brief, limited, intermediate, extended, comprehensive; established patient: minimal, brief, limited, intermediate, extended, and comprehensive), and some particular procedures, such as chest X-ray, have many categories based on very fine differences in actual technology. This situation enables physicians to upgrade their billing codes. Physicians may also bill separately for services such as laboratory tests instead of including them within the office visit charge (319).

Medicare could reduce the number of categories for visits and procedures such as colonoscopy by combining codes that differ in only minor ways. New payment rates could be constructed from a weighted average of the historical charges for all related codes (319) or on the fee for the code used most frequently (569). Once new categories were established, codes could be collapsed at either the carrier level (allowing physicians to continue to bill with present codes) or the physician level (requiring physicians to bill using new codes). A variation, which is used in Quebec, would include payment for simple laboratory tests in the rate for office visits (28).

The experience in Quebec since the mid-1970s suggests that reductions in the number of codes would be likely to moderate the rate of growth in Medicare expenditures for physician services (28). With fewer codes for similar services, physician would be less able to upgrade their billing to more expensive codes. Providers would be likely to find this option acceptable, because they could continue to bill for specific services, perhaps even with the same codes. Since the reduced number of codes would still reflect differences among visits or other services, physicians would be unlikely to change their use of services in such a way that total expenditures increased.

Collapsing codes would entail raising payment for some codes and some physicians and lowering payment for others. Similarly, some beneficiaries would have higher or lower cost-sharing than in the past. If the 13 present colonoscopy codes were collapsed into 2, for example, the approved charge and beneficiaries' cost-sharing would be greater for colonoscopies of a short distance into the colon.

Option 3: Mandate the Medicare program to develop and adopt controls over the volume of physician services billed under CPR, fee schedules, or packaging.

About half the increase in Medicare physician expenditures has been related to changes in the intensity or quantity of physician services. Although approved charges for some services are capped under CPR through the use of the Medicare Economic Index, service volumes in the aggregate are virtually unconstrained.

Utilization controls under Part A of Medicare have a long history. Utilization review was a condition of participation for hospitals in the original Medicare regulations. In 1972, professional standards review organizations (PSROs) were mandated to review hospital utilization. PSROs have now been supplanted by the utilization and quality control peer review organizations (PROs) mandated under the Part A prospective payment system. For Part B, carriers are required to establish prepayment screens to detect potentially implausible combinations of claims for a single physician's services to a particular patient, such as multiple consultations during a hospitalization or followup office visits within 2 to 4 weeks of a major surgery. But there are no uniform nonexperimental means to assess the appropriateness of aggregate service volumes.

Some observers believe that additional or more formal utilization controls are warranted with respect to physician services provided to Medicare beneficiaries. The substantial variations in the use of specific services have been cited as an indication that excessive amounts of some services are being provided in the high use areas. Fee-for-service payment contains incentives to provide additional services even if they provide minimal benefit to patients. Especially in the face of lower approved charges, some physicians might increase the volume or intensity of services billed to Medicare. Monitoring or controlling specific services would respond to the concern about variations in use, but a more encompassing utilization review program would respond to the concern about more pervasive use increases.

Monitoring might take the form of more elaborate physician profiles that would focus on utilization patterns by specific physicians in addition to the current profiles that focus primarily on charges. These profiles might be refined to examine patterns of practice including all physician services provided or ordered in the treatment of particular diagnoses. One might want to reexamine the results from the evaluation of the Experimental Medical Care Review Organizations or the utilization review programs of certain individual practice associations to assess the relevance of such approaches for the Medicare program. As discussed in option 2, collapsing codes could control volume of services billed by inhibiting billing of more highly paid categories or by inhibiting performing additional ancillaries if they were included in visits.

If excessive use of services were verified, strengthened controls could be mandated. These might include mandatory prepayment screens to be implemented by Medicare carriers for specific physician services using national parameters to detect potential overuse. If certain relatively costly services were found to be overused, a pretreatment authorization requirement could be introduced. PROs might be given the option to review physician services provided to hospitalized Medicare beneficiaries, which account for 61.9 percent of all Medicare approved charges for physician services (69). But given the existing PRO review of the associated hospital services and the hospitals' own incentives to reduce the provision of marginally useful ancillary services, additional efforts to review physician services provided in hospitals might not be warranted.

Physician services provided on an ambulatory basis would provide a more fruitful realm for review by PROs or others, especially if service volumes increased in response to relative reductions in approved charges. A report on volume and case-mix changes under the Medicare fee freeze was mandated for 1985. An examination of this report might highlight the potential use of carriers for monitoring utilization changes under fee schedules. Alternatively, the Health Care Financing Administration (HCFA) might reinstitute research and demonstrations on new approaches to ambulatory medical care review.

Under CPR payment, controlling use without additional controls on price might fail to control total Medicare expenditures if providers were able to increase their billed and hence approved charges over time. With payment based on fee schedules or packages of services, Medicare would have more control over payment rates.

HCFA might explore the use of an expenditure cap as a means of controlling utilization and total expenditures. This approach has been used in both the Federal Republic of Germany and in Quebec, with revenue limits placed on individual physicians or on groups of specialists (263). More research on this approach would be needed, however, because there is no consensus on whether this type of approach has reduced utilization or the rate of growth of expenditures. Furthermore, in contrast to the situation in Germany and Quebec, Medicare is one of several sources of physician revenue. The administrative feasibility and other implications of an expenditure cap under Medicare would have to be evaluated in this different context.

Option 4: Mandate the Medicare program to require physicians to accept assignment in order to receive payments from the program.

Although no available data indicate that beneficiaries' financial access to care is limited by current assignment policies, there is justifiable concern that lowering approved charges under CPR or under a fee schedule would reduce assignment rates and reduce beneficiaries' financial access to care by raising their out-of-pocket expenses.

Continuing case-by-case assignment would be inconsistent with payment for packages of services, which are intended to put coordinating physicians or other recipients of payment at financial risk for the cost of resource use. If providers could take assignment on a case-by-case basis, they would do so only for cases whose costs were likely to fall below the packaged rate paid by Medicare. For cases whose costs were likely to exceed the packaged rate, physicians would refuse assignment and bill higher charges to the beneficiary, thus transferring the financial risk back to the beneficiary.

Medicare could mandate assignment for all services, either as individual services or as packages of services, paying neither the physicians who did not take assignment nor the beneficiaries who used their services. Or Medicare could limit mandatory assignment to selected services or packages over which it has market power, such as for inpatient services or cataract surgery. Another alternative would be to adopt all-or-nothing participation, which differs from mandatory assignment in that beneficiaries would still be paid at the level of Medicare's approved charges if they used physicians who did not take assignment.

As discussed in option 1, the extent to which prevailing charges have limited a specialty's approved charges, the proportion of practice revenue derived from Medicare patients, and the level of past assignment rates might predict whether particular specialists would accept Medicare patients under mandatory assignment or would accept assignment under all-or-nothing participation. On these grounds, general practitioners and family physicians would be the least likely to accept assignment under the new policies, and radiologists, pathologists, and general surgeons would be the most likely to accept assignment. That internists' approved charges have been highly constrained by prevailing charge limits would predict that they would be less likely to accept assignment under the new policies, but Medicare also accounts for a substantial portion of their practice revenue.

Although the effect of mandatory assignment on Medicare expenditures would depend on the approved charges and volume response of physicians who continued to take beneficiaries as patients, it is likely that within a specialty physicians with lower approved charges would continue to participate and that Medicare expenditures would rise less rapidly in the short term. Mandatory assignment could reduce beneficiary out-of-pocket expenses and increase beneficiary financial access if physicians with lower approved charges remained in the program. But beneficiary access would be reduced to the extent that physicians refused to participate in Medicare. Under all-or-nothing participation, Medicare expenditures would remain the same, but beneficiaries' out-of-pocket expenses would depend on the approved charges of physicians who accepted assignment and on the extent to which physicians who refused assignment billed beneficiaries above the level of approved charges. The effect on other payers would depend on the extent to which physicians whose revenues from Medicare beneficiaries were lowered shifted their practice time and provision of services to other patients.

With regard to mandatory assignment for packages of services, neither the Medicare program nor the Medicaid program has had experience with assignment related to paying a coordinating physician. Such a role would be new for physicians other than those who have functioned as case managers. Acting in this capacity would require physicians to develop different professional relationships and would entail additional paperwork and coordination by the primary physician. Although coordinating physicians would have a limit on payment received, other physicians providing services to patients might wish to "bill" the attending at higher rates than the package could bear. Unless the risk was shared among physicians or with Medicare, many physicians might refuse to participate in the program. Paying a group of physicians or the medical staff of a hospital would be less of a novelty for physicians who had participated in group practices or individual practice associations.

Option 5: Establish a physician payment commission to review potential changes in payment methods and to monitor changes implemented.

A consensus is developing that supports reforms in Medicare's methods of paying for physician services. But even if a method was adopted that could be implemented quickly, such as construction of fee schedules from historical charge data, critical technical and clinical issues would remain to be decided, including relative fees for types and sites of services and a process for updating scheduled fees and reweighting selected fees. Movement over a longer period to other payment systems, such as per-case payment for inpatient physician services or mandatory capitation payment, would require similar technical expertise.

This option would establish a physician payment commission to advise HCFA about such physician payment changes. The Medicare Reconciliation Act, H.R. 3128, which was approved by House-Senate conferees of the 99th Congress, contained such a provision. Like the Prospective Payment Assessment Commission created in connection with Medicare's prospective payment system for inpatient services, a physician payment commission could consist of people from disciplines and perspectives that have an interest in the issues (such as beneficiaries, physicians from different areas of medicine, and other health providers and organizations likely to be affected) and that have technical expertise that is important to incorporate in policy decisions (such as economists and insurers).

A physician payment commission could provide technical and clinical advice that HCFA would need to make informed decisions. The commission could also serve as a conduit for the views of parties, such as physician associations, insurers, and HMOs, that would be affected by physician payment reform.

Even if such a commission was not established, HCFA could obtain technical and clinical advice from relevant individuals and organizations. Furthermore, policymakers would still have to evaluate the recommendations made by the advisory group. It could also be argued that the advice of a physician payment commission would be more valuable after the course of payment reform was set, when such a commission could make recommendations about implementation, refinements, and updates.

Continuation of Present Payment Arrangements

The options presented below could be adopted in the short term under a strategy to continue CPR as the mainstream payment method but to refine other existing or related payment methods. Within this set of options, Congress could emphasize measures related to fee schedules or capitation payment if it were interested in moving Medicare payment in that direction.

Option 6: Mandate the Medicare program to reduce approved charges under CPR by one of the following methods:
- **lowering the percentile at which prevailing charges are calculated,**
- **reducing the frequency of updating charges by freezing charges, and**
- **giving beneficiaries the option of receiving care from preferred provider organizations (PPOs).**

This option is intended to reduce the rate of increase in Medicare expenditures by reducing Medicare's approved charges. But any program savings produced by lowering the percentile at which prevailing charges are calculated would be diluted over time because physicians could raise their approved charges by raising their billed charges. Furthermore, the effects of the first two approaches on Medicare expenditures are difficult to predict because of uncertainty surrounding the change in volume of services that would be associated with reductions in approved charges.

Beneficiaries' unassigned liability would increase as physicians' assignment rates fell in reaction to lower approved charges and would most likely exceed decreases in coinsurance. As in the case of other measures to reduce approved charges, the effect on other payers would depend on the extent to which physicians shifted their provision of services to non-Medicare patients.

Giving beneficiaries the option of receiving care through PPOs would enable Medicare to take advantage of the increasingly competitive marketplace. Medicare could contract either directly with providers or indirectly with PPO organizations or insurers for payment below the level of approved charges. Medicare could encourage beneficiaries to use PPO physicians by reducing cost-sharing or premiums. Consistent with the concept of induced demand, physicians joining a PPO might expect to counteract lower Medicare payment rates with greater volume of services. To address this concern, utilization control could be undertaken by either the PPO or Medicare.

In the absence of greater use of services, beneficiaries who used PPO providers would have lower out-of-pocket expenses. Reductions in the deductible or coinsurance rate for using PPO physicians might entice beneficiaries to exercise the PPO option. Many beneficiaries have private supplementary insurance that covers Medicare cost-sharing amounts, but some might welcome the chance not to pay premiums for private insurance. Although reducing Medicare premiums would be an attractive financial incentive to beneficiaries, beneficiaries would then be required to receive care only from PPO providers.

Option 7: Mandate the Medicare program to pay for specific services according to fee schedules.

A mixed option might involve the use of fee schedules only for services with certain characteristics. In particular, services that are believed to be widely and consistently available at relatively homogeneous prices or, alternatively, "referred" services provided to hospitalized beneficiaries might be paid through the use of a fee schedule. In the case of anesthesia services, for example, most beneficiaries have little or no role in selecting an anesthesiologist, and little opportunity to search for one that might be available at a relatively low price. For this reason, a single approved charge could be established for the professional components of radiology, anesthesiology, and pathology—and any others—involved in providing services to hospitalized beneficiaries.

This approach has the virtue that it could be quickly implemented, particularly with respect to those services deemed widely and consistently available. Waiting for the completion of analyses covering all 7,040 procedures would not be necessary. The difficulty would be in the reaction of those physicians who are affected by this policy and receive lower approved charges. Referral physicians would be less able to increase volume of services in response to lower payment rates because they are dependent on other physicians' referring patients. Affected physicians might refuse assignment for such services, in effect, placing the burden of the reductions on the beneficiaries. If this problem occurred, this option might be amended to mandate assignment for all services provided under the fee schedule. As discussed in option 4, radiologists and pathologists are among specialists most likely to participate under mandatory assignment.

Option 8: Mandate the Medicare program to increase its funding of research and demonstrations on the construction and use of rates for capitation payment.

Increased beneficiary enrollment in plans paid by capitation has the potential to help control Medicare expenditures. A major impediment to the realization of this potential is the lack of well-developed methods for adjusting capitation rates to the likelihood that a beneficiary's care will be expensive or inexpensive. Without an appropriate adjustment for risk, capitation payment could give plans a financial incentive to enroll low-risk beneficiaries and to shun high-risk ones. In those circumstances, expenditures of the Medicare program might even rise if high-cost beneficiaries remained in traditional arrangements and Medicare paid greater amounts than otherwise for low-risk beneficiaries.

This option would mandate HCFA to increase research on risk-adjusted capitation rates and to test different approaches in demonstration projects. Further research and demonstrations would permit HCFA to ascertain whether additional adjustments to the adjusted average per capita cost (AAPCC) for health status, such as the presence of certain conditions that are expensive to treat, or other approaches, such as competitive bidding or risk-sharing arrangements with Medicare, would be feasible and advisable. Diagnosis-related group (DRG) categories were based on diagnostic information that hospitals had been recording for decades. Risk adjustors for capitation payment must relate to beneficiaries' use of a much broader range of medical care, and there is no accepted classification system for this task.

HCFA is currently sponsoring some extramural and intramural research on refining the AAPCC used for payment to risk-sharing plans (539). Increasing that research would draw funds from the budget for HCFA's Office of Research and Demonstrations, a budget that has been reduced in recent years. If this option was not adopted and such research was maintained at existing levels, policymakers could make decisions on the basis of research and demonstrations that are now underway and could respond empirically to any problems as they arose with new techniques.

Option 9: Mandate the Medicare program to fund demonstrations of alternative techniques for quality assurance under capitation payment.

Although studies of non-Medicare enrollees in HMOs have concluded that HMOs have provided care equal to or better than that provided by comparison groups, the financial incentives inherent in capitation payment cause concern about underprovision of services and adverse effects on patient management and health. In addition, these studies have not examined the care of elderly people. The regulations implementing the Tax Equity and Fiscal Responsibility Act of 1982 (Public Law 97-248) (TEFRA) call for PROs to review the care provided by HMOs and CMPs. However, there is little experience in quality review and assurance regarding underprovision of services.

Under this option, HCFA would be required to fund demonstration projects that would evaluate alternative methods of assuring quality in risk-sharing plans. Medicare could test the potential applicability of quality assurance and case management techniques now being developed and used in the private sector. These activities could also draw on the knowledge of likely quality problems that is being gained in the current evaluation of Medicare demonstrations of capitation payment. Methods could then be identified to monitor and correct such problems. The insight gained during the demonstration projects could be applied to quality assurance in risk-sharing plans or under geographic capitation, if Medicare chose to adopt that approach.

A drawback of this option is that PROs, or their designated representatives, might acquire similar knowledge at less expense in the course of reviewing the care provided by HMOs and other CMPs. It might then be simpler and cheaper to rely on existing organizations and stipulate that the knowledge gained be evaluated and disseminated among PROs and other interested organizations.

Payment Based on Fee Schedules

Basing payment for services on fee schedules would address several of the problems currently perceived within CPR: variations in approved charges, unpredictability of payment amounts, confusion on the part of beneficiaries and providers, and limited Government control over rising price levels for physician services.

Because under a fee schedule a single fee is paid for a specific service to any physician within a particular peer group in a particular jurisdiction, variations in approved charges are eliminated within that peer group and jurisdiction. In extreme form, a national fee schedule that did not include specialty distinctions would provide a single payment rate for a specific service for all physicians in all parts of the country. More likely forms of fee schedules would involve some geographic distinctions (e.g., state- or carrier-wide fee jurisdictions), and specialty distinctions could also be retained under a fee schedule.

Because Medicare's payment rate could be known in advance for both beneficiaries and physicians, there would be much less uncertainty about beneficiary coinsurance liability and physicians' expected Medicare receipts. Physicians' billings could proceed on a more expeditious basis because Medicare payment amounts could be better known in advance. A fee schedule could also enable Medicare beneficiaries to become better buyers because the amount of any unassigned liability would be easier to establish in advance and some beneficiaries could be expected to search for physicians who provided a specific service "at the Medicare fee" or to request their usual physician to provide the service at that price.

Given a fee schedule system of payment, a single parameter could be used to revise the level of payments to take account of changes in the costs of producing physician services and perceived changes in the value of those services. Even under a relative value system with multiple conversion factors for the various types of physician services, a fee schedule would give Medicare potentially greater control than CPR of the level of and increases in approved charges. In fact, in the absence of changes in the mix of services, a fee schedule updated with the Medicare Economic Index could be expected to exhibit lower increases in average approved charges than the CPR system with the Medicare Economic Index because under CPR only some of the *maximum* approved charges are constrained; *average* approved charges under CPR can increase at a faster rate.

Because the circumstances that underlie correct relative approved charges are dynamic, one would want the fee schedule system to have a mechanism for responding to changes. Geographical and specialty differentials and the approved charges of new procedures could be reviewed over time to determine whether changes in payment rates were appropriate.

Adoption of payment based on fee schedules does not imply a particular change in the level of Medicare average payments per service, although there would be more interest in a conversion expected to reduce expenditures than in one that was budget neutral. A change that reduced the rate of growth in average approved charges might also have the effect of stimulating efficiency in the production of individual physician services. However, given the incentives of fee-for-service payment, inefficiencies would be likely to remain in the combination of services used for a medical condition.

Concerns about increases in the volume of services billed would arise under fee schedules or any other fee-for-service reform if Medicare payment levels were more constrained. In addition, a conversion to fee schedules would increase payment rates to some physicians and lower them to others, compared to CPR. Physicians who experienced a decrease might attempt to recoup perceived lost revenues by providing or billing for additional services or substituting services with higher approved charges, with no countervailing decreases in service volume by physicians who experienced increases in approved charges (158). If this occurred, payment by fee schedule might lead to higher Medicare expenditures. For this reason, additional efforts to monitor use and to control unwarranted utilization increases might be necessary. In addition, collapsing procedure codes within a fee schedule might prevent increases in billing for additional services or upgrading of services billed. The experience in Quebec, which collapsed visit codes and incorporated payments for common laboratory tests in the office visit fee, suggests that these changes can check increases in use and total expenditures under a fee schedule (28).

A fee schedule could be used to determine reimbursement in several ways that are not mutually exclusive. Any or all of these alternatives might also be combined with an expenditure cap, which could be implemented by either disallowing claims above the cap or by discounting claims until there was a reasonable expectation that the cap would not be exceeded. A fee schedule implemented as a schedule of maximum allowances would set upper bounds on approved charges for specific services. The approved charge for any service would be established as the lower of the physician's billed charge or the fee schedule amount. Under another alternative, mandatory assignment, the approved charge would be deemed payment in full and physicians would be prohibited from billing above the Medicare allowance. A third alternative would involve payment of only the fee schedule amount regardless of the physician's actual billed charges. Because the beneficiaries would be responsible for paying for the difference between the physician's bill and the Medicare allowance, beneficiaries would have a substantial incentive to seek physicians with low charges.

Option 10: Mandate the Medicare program to construct fee schedules for physician services.

Three major variations have been identified to construct fee schedules, either because of ease of their implementation or current professional interest in their development: using historical charge data, developing a relative value scale (RVS) by estimating the resource costs associated with each specific physician service, and developing an RVS or a fee schedule with physician involvement. A blend of these and other options would be possible, for example, using historical charge data to develop fee schedules, but addressing payment differentials among certain services or payment rates for new procedures through an an analysis of resource costs and physician advice.

Option 10A: Mandate the Medicare program to construct fee schedules for physician services based on historical charge data maintained by Medicare carriers.

Creating fee schedules from carrier data on physician charges for specific procedures would be a viable short-term option. Average approved charges for each service could be computed from each carrier's beneficiary history data files. The average approved charge would establish the Medicare fee schedule amount for that service within a carrier jurisdiction. Carrier-specific fee schedules would probably be fairly consistent across the country in terms of relative fee levels within jurisdictions if not in absolute levels. Nationally, there is substantial correspondence in relative values among carriers and little difference among relative value scales based on prevailing charges, median billed or approved charges, or average billed or approved charges.

In all likelihood, the initial fee schedules created under this option would have to be State or locality specific, because merging the data across carrier jurisdictions would be difficult in many instances because of differences in data recording techniques and billing conventions. However, this problem might actually ease the transition from CPR to a fee schedule, because for most physicians, the resulting approved charges for any procedure would not be significantly different from previous payments for that procedure (389).

The advantage of this method of establishing fee schedules is its speed of implementation. A potential disadvantage is that the creation of fee schedules derived from charge data would ignore any imbalances in the current structure of charges. If there are discrepancies in relative payment levels between procedural and nonprocedural services, they could become further embedded in any fee schedule based on charges.

A market-oriented variation to this approach that established fee levels below the current averages might be based on physicians' existing patterns of participation in the Medicare. In effect this method would explicitly test whether sufficient quantities of some services might be procured at levels much below that of the prevailing charge. Under this variation, Medicare would instruct its carriers to identify for each service the *lowest* approved charge necessary to supply a significant fraction of the total volume provided to Medicare beneficiaries. Alternatively, a more stringent approach would be to identify the lowest approved charge that would be greater than or equal to the approved charges of a significant fraction of all physicians providing that service to Medicare. Either of these approaches might be modified to identify the lowest charge needed to acquire a sufficient number of *assigned* services. Determining the approved charge level would be difficult, and beneficiary access would be jeopardized if too low a payment level was established. Studies have confirmed that physicians are responsive to the level of Medicare approved charges but there is no previous research on the issue of beneficiary access to physician services under this type of pricing. A demonstration project could be undertaken to evaluate this approach.

Option 10B: Mandate the Medicare program to construct fee schedules for physician services based on estimates of the resource costs associated with each procedure.

The considerable attention given to estimations of resource costs as the source of an RVS is to be expected, given the common perception that price ought to be related to cost. In addition, the controversy over the relative differences in payments for procedural and nonprocedural services originates in a comparison of the relative efforts in physician time between office visits and some of the more technical services. It is argued that if relative payment levels were based on costs, the disparities would disappear, removing potentially inappropriate incentives that may influence physicians' clinical decisionmaking.

Under most suggested approaches, resource cost estimates would be derived from time and motion studies or other data on actual resources used by actual physicians. These data would also be adjusted to reflect differences among physicians in the length of required training and in overhead expenses and differences among services in complexity or urgency. The resulting resource-cost-based relative values would then be converted to a fee schedule by determining the level of a monetary conversion factor.

The difficulties and costs associated with such an approach should not be underestimated. There are 7,040 different physician services identified in the HCFA Common Procedure Coding System. In theory, all would require resource cost estimates. As an alternative, resource cost estimates for selected services could be used to "anchor" existing alternative relative values for related services, such as those implicit in charge data, until a complete set of resource costs became available. Even estimating the resource costs of only a few services would require considerable time and effort.

In addition, many believe that the search for an objective set of resource costs is chimerical. Two physicians may produce the same service at two different costs without either one of them being inefficient. Two physicians may produce two different services at identical cost, yet if one is produced efficiently and the other not, a resource-cost-based approach might reward the inefficient producer. Further, the costs of producing a particular service can be expected to drift to the level of the payment for that service whether that level is higher or lower than that of cost. If payment is below cost for some physicians, they will discontinue providing the service, and hence costs will appear to fall. If payment exceeds costs, costs can be expected to rise as a result of either competition among physicians in quality enhancements or a lack of price-sensitive purchasing by physicians for the resources used to perform those services.

Option 10C: Mandate the Medicare program to elicit physician professional input to construct fee schedules based on:

- *a consensus among physician groups with respect to the relative values of individual procedures, or*
- *negotiations between the Medicare program and provider groups for the specific purpose of establishing Medicare fee schedules.*

Consensus development methods could be used to formulate relative values. This approach might focus more directly on differences between services in terms of the physician efforts and other professional resources that they require. The nonphysician costs of operating physicians' practices have been estimated at 40 percent of gross professional revenues with no extraordinary differences across specialties (37), implying that direct physician costs are 60 percent of the costs of producing physician services. Consensus relative values might approximate resource costs, obviating the requirement for detailed data collection.

Development of consensus relative values by physicians would take advantage of physicians' familiarity with the range and frequency of possible situations in which certain services may be performed. In addition, physician input might facilitate cross-specialty comparisons that might be difficult for the nonphysician or that might not be readily apparent in any subsection of an RVS prepared by a particular specialty. Other participants, such as nonphysician providers, representatives of other third-party payers, and Medicare beneficiaries, could also be included in the process of establishing relative values. The process of explicitly eliciting physician and other professional input into the RVS construction process would enhance the acceptance of the final fee schedule(s) derived from this RVS.

The time required for a complete examination of physician services' relative values could be considerable. Further, based on previous reviews, a new set of consensus relative values would be unlikely to differ much from existing sets of relative values or those relative values that are implicit in current charge-based payments (191, 225,226).

Fee schedules for government health insurance programs in other countries have been developed through explicit negotiations with physician associations (388). In Canada, for example, where separate negotiations are conducted in each of 10 provinces, real per capita expenditures on physician services increased 17.8 percent between 1971 and 1982 compared to 46.1 percent in the United States. In Quebec, reputed to be the most stringent with respect to fee negotiations, the increase was 15 percent below the Canadian national average (28).

In such countries, the focus of negotiations is price per relative value unit from an existing RVS. In the United States, there is no single, consensus RVS, although various editions of the California Relative Value Studies and their progeny remain in circulation. Some effort would have to be made to identify a definitive RVS for conducting negotiations. An RVS based on current Medicare average approved charges could be constructed, but there would be some controversy over its use as a starting point for negotiations given the perception of imbalances in existing fees.

Another hurdle in proceeding to negotiations would be the identification of negotiating groups to represent physicians. HCFA could select a panel of physicians for this process, perhaps by choosing from among physicians nominated by national associations of physicians, but those physicians' authority as negotiators would be uncertain as would any claim as to their representativeness. There is no history in this country of such negotiations, nationally or locally, that might guide the drafting of legislation to foster the development of such groups.

Payment for Packages of Services

Payment for packages of services would put providers at financial risk for the use and cost of services by giving them a fixed payment for a set of related services. Packages of services for payment purposes could range in scope from a visit or procedure to all physician, ancillary, and possibly facility services associated with a particular episode of care.[10] An ambulatory-visit package adjusted for diagnosis would include all physician and ancillary services related to one visit. Building on the global fee now paid to surgeons for certain procedures, a special-procedure package would include ancillaries and the services of all physicians associated with a single diagnostic or therapeutic procedure, such as a magnetic resonance imaging (MRI) scan, extracorporeal shock wave lithotripsy (ESWL), or cataract surgery. A package for an ambulatory episode of care would include all physician and ancillary services associated with an ambulatory episode, whereas a package for an inpatient episode of care would include the services of all the physicians associated with a hospitalized patient (see figure 1-2). A package for a total episode of care would encompass all ambulatory and inpatient physician services and ambulatory ancillaries associated with the overall episode.

Although payment for packages of related services is similar to the global fee paid to surgeons for all of their services connected with cataract surgery or other procedures, there is no experience with payment for packages that include the services of more than one physician. Because of the lack of experience and, in some cases, usable payment categories, the options within this strategy call for research to develop categories or demonstrations to evaluate the effects of packaged payment.

Providers receiving a fixed amount for a package of services would have a financial incentive to refrain from using resources whenever possible and to use the least expensive ancillary services, referral physicians, and, when applicable, facilities. Mandatory assignment would be necessary with packaging to prevent providers from passing that financial risk back to Medicare or on to the beneficiary by billing for amounts in addition to the packaged rate. In contrast to the present situation, the concern about quality of care within packages would be that services would be underused or of inferior quality. Access could also be problematic if the variation in the costs of treating expensive patients was not adequately reflected in the case-mix adjustment. In that case, physicians might refuse to treat beneficiaries with complicated and possibly expensive conditions.

The cost to Medicare and to society would depend on the extent to which providers shifted care outside the package and shifted more expensive beneficiaries to other payers. Beneficiaries' costs could increase, decrease, or remain the same. If the packaged rate was set at the mean, the coinsurance of beneficiaries with less costly care would rise, while that of beneficiaries with more costly care would fall. Beneficiaries' cost-sharing liability might rise if physicians shifted care outside of the package.

Payment for packages of services would encourage efficient use of resources within packages, but not across packages. Expensive technologies, such as MRI and ESWL, would be more likely to be regionalized if their services were included in a package. Because MRI is so expensive, its use within a package would be more likely than at present to be limited to conditions for which its efficacy had been demonstrated. To the extent that ESWL obviated more expensive procedures (such as open surgery on the kidney) that were included within the same package, ESWL would be more likely than at present to be used within that package. Clinical laboratory procedures might be used more efficiently, but not if their use could be spun off into out-of-package care. In general, payment for packages would encourage the development of technologies that saved physicians' time, such as new surgical or diagnostic procedures.

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[10] As a precursor to payment for packages of services, codes for certain services could be collapsed and common laboratory tests included in the visit rate (see option 2).

Figure 1-2.—Alternative Methods of Medicare Payment for Services Provided to a Hypothetical Patient Presenting the Symptom of Extreme Flank Pain[a]

Pre-hospital ambulatory services					Inpatient services									Post-hospital ambulatory services				
First office visit primary physician	First office visit urologist	Urinalysis	Intravenous pyelogram (IVP)[b]	Radiologist service for IVP	Radiologist service for KUB X-ray[c]	Anesthesiologist service for extracorporeal shock wave lithotripsy (ESWL)	Urologist services ESWL and hospital visits[d]	Physician consultant services[f]	ESWL procedure	Hospital stay[g]	Urine culture	KUB X ray	Blood tests	Post hospital office visit urologist	IVP or KUB X-ray	Radiologist service for IVP or KUB X-ray	Second post hospital visit urologist[h]	One office visit every 6 months urologist
Fee-for-service	Fee-for-service	Fee-for-service	Fee-for-service	Fee-for-service	Fee-for-service	Fee-for-service	Fee-for-service[e]	Fee-for-service	DRG payment for inpatient facility services					Fee-for-service	Fee-for-service	Fee-for-service	Fee-for-service	Fee-for-service
Ambulatory episode-of-care package					Inpatient episode-of-care package for physicians' services				DRG payment for inpatient facility services					Ambulatory episode-of-care package				Ambulatory visit package
Capitation payment[k]																		

☐ Payment by CPR or fee schedules[i] ▨ Packaged payment[j]

[a] The actual treatment would depend on the particular patient. Some patients might be seen initially in an emergency room or require a procedure other than ESWL, such as surgery.

[b] An intravenous X-ray of the kidneys and ureters.

[c] X-ray of the kidneys, ureters, and bladder.

[d] The number of hospital visits would vary with the patient's length of stay.

[e] The urologist performing ESWL might charge a fee for the ESWL procedure separate from fees for related hospital visits, or instead might charge a global fee covering both the procedure and the visit.

[f] Some complicated patients might need to be seen by specialists such as cardiologists.

[g] The current average length of stay for ESWL is 4 days (40).

[h] Most patients would need only one post-hospital visit. A patient with gout or multiple stone recurrence might need two post-hospital visits and additional visits every 6 months.

[i] It is assumed that DRG payment would continue for inpatient facility services.

[j] Packaged payment can include services related to an ambulatory or inpatient episode of care or an ambulatory visit. A total episode-of-care package, though not shown here, would combine services in ambulatory- and inpatient-episode-of-care packages. A special-procedure package, also not shown here, would include services associated with a special procedure such as ESWL.

[k] Capitation payment here includes ambulatory and inpatient services, including physician, ancillary, and hospital services. Capitation payment could alternatively exclude hospital inpatient services.

SOURCE: Office of Technology Assessment, 1985. Based on data from A. Jenkins, University of Virginia Medical School, Charlottesville, VA, personal communication, Nov. 26, 1985.

One of the major uncertainties regarding packaging is how physicians would handle the distribution of the packaged payment rate among several physicians who participated in a case. The primary physician would in a sense act as a general contractor for the services of other physicians and health professionals, such as anesthesiologists or nurse anesthetists and assistant surgeons. The recipient of the packaged payment rate would have to negotiate with other providers concerning the availability and price of their services. The primary physician would also bear financial risk for these services. Even with mandatory assignment, unless case-mix adjustment was adequate, physicians might avoid seeing more complicated and expensive patients or might request out-of-package payment for them.

Option 11: Mandate the Medicare program to investigate paying a packaged rate for selected special procedures.

A special procedure package would incorporate physicians' services and ancillaries related to a single diagnostic or therapeutic service. Physicians would then have an incentive to consider cost in deciding about the use of ancillaries, assistant surgeons, or particular anesthesiologists. A package for MRI or ESWL, for example, would incorporate physicians' charges, the MRI or ESWL procedure, and any visits. A cataract surgery package would pay the attending physician for the procedure and followup care, anesthesiologist services, and ancillary services. The facility cost could also be included in the package amount, an addition that would encourage use of the least costly setting, whether in an inpatient or ambulatory facility.

To the extent that physicians found packaged payment for special procedures similar to present arrangements, the change in payment method would be more acceptable to them. Costs and utilization would be controlled within special-procedure packages, because physicians would receive a fixed payment and would not receive additional revenue for providing extra services. If policymakers decided that packaging is a reasonable payment alternative, packaging small segments of the system would be easier to implement initially.

However, more complicated patients whose care was likely to be more expensive than the packaged rate might receive poor quality care. Payment for a package contains incentives discouraging the use of ancillary and referral services. Unless case-mix adjustment was adequate, the coordinating physician would have a financial incentive against obtaining consultations for diabetic patients having cataract surgery, for example. In addition, as would be the case with payment for other packages, new professional relationships would have to be created. Since only small portions of the system would be controlled, utilization and expenditures could rise for other procedures and out-of-package care. And excluding the facility cost would provide physicians with no incentive to choose the most cost-effective site.

Option 12: Mandate the Medicare program to conduct further research to define episodes of care, both ambulatory and total episodes, and to develop case-mix measures appropriate for physician payment purposes.

Currently, no defined episode categories exist for payment purposes. Defining episodes of care would give Medicare the option of moving away from a fee for each service toward fees for groups of services. Examining episodes of care would also aid evaluation for utilization review or quality assurance of the components of the care process, including outcomes and efficiency of diagnostic treatment (223).

Different categories would have to be defined for episodes of preventive care, chronic care, and acute care because of the variability of resource use among the types of care. In addition, classification systems would have to take into account that principal diagnosis is more definite in the inpatient setting than in the ambulatory setting (222). For total episodes of care, case-mix classification systems that encompass the totality of patient care would have to be developed because there is no coordinated system for both ambulatory and inpatient services.

Option 13: Mandate Medicare demonstration projects to pay for physicians' inpatient services by diagnosis-related groups (DRGs).

Medicare's prospective DRG-based payment system gives hospitals a financial incentive to control the use and cost of services provided to inpatients. As a result of this payment system, physicians may feel pressured by hospital administrators to constrain orders for ancillary services and to limit patients' lengths of stay. But physicians have no direct financial incentive to consider price and cost when ordering the consultative services of other physicians and health professionals. In order to provide such incentives, Medicare could use DRGs to pay for inpatient physician services. Payment by DRGs could be applied to only hospital-based physicians (radiologists, anesthesiologists, and pathologists) or to attending and consultative physicians as well.

Option 13A: Mandate a Medicare demonstration project to pay for hospital-based physician services as part of hospital DRGs.

Under current payment arrangements, attending physicians and hospital administrators have little incentive to consider the costs of hospital-based physicians who provide anesthesiology, pathology, or radiology services to individual patients. If payment for the services of hospital-based physicians were incorporated into current DRG payments made to hospitals, hospital administrators would have more of an incentive to encourage attending physicians use the services of these hospital-based physicians more efficiently or to substitute, where possible, the services of other less expensive health professionals.

Physician services that relate to a hospital or patient population as a whole, such as managing a clinical laboratory, are already paid as part of the hospital's DRG payment (Social Security Amendments of 1983, Public Law 98-21). In addition, tests that do not require the direct services of a pathologist are paid under Part A. If policymakers deem payment by DRGs for all inpatient services a reasonable alternative, this option would be a step in that direction.

Under this option, hospitals would wish to negotiate contractual arrangements with hospital-based physicians, namely, radiologists, anesthesiologists, and pathologists, to provide services at lower cost. In fact, precedent exists for such contractual arrangements (326). And until TEFRA, hospitals could bill Medicare for the services of pathologists and radiologists. Relative to other specialties, the hospital-based specialties have high incomes, and the gap appears to have widened in recent years (123,391).

Incorporating payment for physicians' services provided by the three hospital-based specialties into the hospital DRG would encourage these physicians to provide care in other sites and perhaps to non-Medicare patients. The extent to which these physicians could afford to change their involvement with Medicare would depend on the extent of practice revenue gained from these patients. In 1981, when all physicians on average collected 17 percent of gross practice income from Medicare, radiologists collected 28 percent, anesthesiologists 22 percent, and pathologists 21 percent (353). Thus, a substantial portion of revenue for the three specialties would be affected if Medicare patients were not seen. Furthermore, radiologists and pathologists have had higher assignment rates than any other specialists. Although anesthesiologists have had lower rates than general surgeons, the assignment rates of anesthesiologists have been as high as surgical specialists overall (494).

In the absence of research examining the effect of incorporating payment for the services of hospital-based physicians into hospital DRGs, there are few data on which to base a change. If a demonstration project were funded, however, few physicians might volunteer for it. Although radiologists, anesthesiologists, and pathologists have been singled out for changes in payment under previous legislation, such as TEFRA, questions of equity might be raised. Thus, it might be necessary to incorporate payment for hospital-based physicians' services in hospital DRGs without a demonstration or to offer certain benefits for participation in the project.

Option 13B: Mandate a Medicare demonstration project to pay for all inpatient physicians' services by physician DRGs.

Medicare could fund a demonstration project to pay for inpatient physician services by physician DRGs. Physician DRGs could be applied to all inpatient care or only to surgical inpatient care. The demonstration could experiment with different recipients of payment, such as the attending physician, the medical staff, the hospital, or a combined hospital-medical staff entity. Mandatory assignment would be necessary for these demonstrations so that physicians would face a fixed budget constraint and so that they would be unable to accept assignment only for the less costly cases.

The recipient of payment would have an incentive to carefully evaluate and to reduce the use of physician services within these inpatient-episode-of-care packages. Since this package would apply only to the inpatient portion of the system, ambulatory use and expenditures might rise. This option might encourage underuse of inpatient consultative services to the detriment of patients. If case-mix measures or payment policies did not adequately reflect severity, physicians might choose to see only uncomplicated and less expensive patients. This payment approach could also create confusion and administrative complexity if the physician DRG categories differed from the hospital DRG categories or if another system replaced payment by hospital DRGs.

Medicare could fund a demonstration project to pay only for inpatient surgery by physician DRGs, while using CPR or a fee schedule for medical services (320,321). Some researchers consider physician-related charges in surgical DRGs to be relatively homogeneous (313,320,321). But others report that although relative to average charges, charges within surgical DRGs appear to be less variable than those within medical DRGs, the standard deviations (absolute variability) are greater for surgery (571).

Since this inpatient-episode-of-care package would apply only to surgical services in the inpatient portion of the health care system, the use of and expenditures on ambulatory and other inpatient services might rise. On the other hand, payment for surgical DRGs could affect about 22 percent of Medicare's expenditures for physician services[11] (69).

Capitation Payment

Although most Medicare beneficiaries have Medicare pay for their care by fee for service, beneficiaries do currently have the option of having Medicare pay for their medical care by capitation. Regulations to implement TEFRA, effective February 1, 1985, established in effect a voluntary voucher system whereby Medicare may pay a predetermined amount to enroll beneficiaries in plans of their choice (148).

The options below would expand this voluntary system to a mandatory voucher system for all Medicare beneficiaries. Medicare could make capitation payments to two different kinds of fiscal intermediaries: risk-sharing plans, such as HMOs or other CMPs that would provide or arrange for the care of their enrollees; or geographic intermediaries, such as carriers, that would assume the financial risk for the care of beneficiaries in a certain area. In either case, Congress could require that fiscal intermediaries accept Medicare's capitation payment to cover a minimum benefit package. The capitation payment could cover both Part A and Part B services, or it could cover only Part B services, with hospital DRGs retained for Part A services. It is assumed that one of the beneficiaries' options would be to continue to select individual physicians to provide care on a fee-for-service basis. For example, a private insurance company might offer such an arrangement and accept the capitation payment as the premium.

In an era of concern about containing medical expenditures, capitation payment has the advantage of having shown that it can reduce expenditures for care, apparently without compromising quality (279,285). Medicare program expenditures would be much more predictable and controllable under capitation payment than under any of the other payment alternatives. Under a mandatory voucher system of capitation payment, beneficiaries' costs would be likely to fall if plans, as now, were required to share savings with beneficiaries in the form of increased benefits or reduced premiums. On average, beneficiaries' costs would not rise unless Congress decided to increase their financial liability under the Medicare program.

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[11] In 1981, 25 percent of Medicare physician expenditures was for surgical care, and over 90 percent of Medicare's payments for surgery was for inpatient services (69).

However, there is little experience with prospective capitation payment for elderly people in general or for Medicare beneficiaries in particular. How elderly people would fare under risk-sharing plans—whether they would have difficulty choosing and enrolling in plans, gaining access to physicians in large organizations, or receiving appropriate care—is not known. Furthermore, studies of capitation have pertained almost entirely to the experience of large established prepaid group practices, which may differ substantially from the experience of newer plans, which tend to be smaller and differently organized. Medicare demonstration of capitation payment, which have enrolled substantial numbers of beneficiaries since they were funded in 1982, will provide information to address these issues. HCFA has funded an evaluation of these plans (539). Results are being compiled and will become available over the next 2 years.

The amount of a capitation payment is fixed in advance and is independent of the services actually used (see figure 1-2). Under capitation payment, the recipient of payment instead of the Medicare program or beneficiary bears the financial risk for covered services. Since enrollees of capitation plans have little or no cost-sharing when services are used, they face little financial deterrent to seeking care and have been more likely than other insured people to have at least one physician visit during a year (279). On the other hand, a plan that receives little or no extra revenue from additional services has no financial incentive to provide them. Like those paid fee-for-service, recipients of capitation payment have an incentive to perform individual services efficiently. But unlike fee-for-service payment, capitation payment gives recipients an incentive to use the most efficient number and mix of services to manage a patient's condition. To the extent that services add more to cost than to revenue, providers on a fixed budget also have a financial incentive against providing additional services. The countervailing incentive is that plans may lose enrollees who become dissatisfied.

If the capitation payment did not cover Part A services, payment recipients would have increased incentives compared to the present to hospitalize patients. Diagnostic and therapeutic procedures could thereby be performed while the plan incurred the cost only of physician services. These incentives would be compatible with those of hospitals paid by DRGs, because hospitals desire additional admissions and profit from low-cost cases in a given DRG. If capitation payment covered only Part B services, possibly unnecessary admissions would warrant particular attention by the PRO.

Capitation payment to organizations acting as fiscal intermediaries rather than to individual physicians buffers the incentive to underuse services. The bases on which the fiscal intermediary distributes revenue to individual physicians and other providers determine where the financial incentives of capitation payment fall. Providers who are paid by capitation or who share in a risk pool for referrals of ancillary or specialist services have a financial incentive to use judiciously and even underuse the services for which they are at financial risk. Providers paid fees for services have an incentive to provide additional services if the extra revenue exceeds the extra cost. Salaried payment promotes neither overuse nor underuse, but, unlike fee-for-service payment, does not by itself contain incentives for providers to use their time productively (264). In practice, the majority of physician groups paid mainly by capitation have had explicit productivity guidelines, perhaps to compensate for the financial incentives of salaried payment to physicians (205).

Option 14: Amend the Social Security Act to pay for the medical care of all Medicare beneficiaries by capitation payment.

Although voluntary beneficiary enrollment in risk-sharing plans has been increasing dramatically in recent months and by December 1985 encompassed about half a million people or 4.2 percent of all beneficiaries (533), this route to national capitation payment is likely to be gradual and slow. In the meantime, the Medicare program would not be able to take advantage of the predictability of total annual expenditures and of possible cost savings from widespread capitation payment.

This option would establish a mandatory voucher system for Medicare beneficiaries. Medicare would pay to the plan chosen by a beneficiary a capitation payment to cover care provided during a certain time period. The choice of plans could be expanded beyond present HMOs and other CMPs to include PPOs and traditional insurers that were willing to provide the minimum benefit coverage for the capitation payment. HCFA or another part of the Department of Health and Human Services could certify a plan's financial viability. This option would be consistent with Enthoven's Consumer Choice proposal regarding plans that would provide comprehensive care (129) and with the Administration's proposals that beneficiaries be given vouchers and select plans (104).

Prepaid group practices have lowered total per capita costs 10 to 40 percent compared to comparison plans, primarily because of lower hospitalization rates (279). HMOs have had about the same rates of increase as fee-for-service practices (279,343), suggesting that capitation plans have been able to maintain a lower level of costs over time, despite the introduction of new technologies. A study of enrollees randomly assigned to a prepaid group and given comparable benefits found expenditures 25 percent lower than fee-for-service enrollees with free care, but no significant differences compared to enrollees with 95 percent coinsurance (285). The results suggest that prepaid group practice and high cost-sharing had similar effects on expenditures and hospital use, but that prepaid group enrollees were not so deterred from seeking care (343).

Because the technology of setting capitation rates for different categories of beneficiaries is not well developed, the structure of capitation rates could unintentionally contain incentives for plans to select beneficiaries likely to have lower than average expenditures and to shun higher cost beneficiaries. Because of variations in annual expenditures among beneficiaries, a risk-sharing plan has the potential to suffer great losses or to reap sizable gains. Studies from the mid to late 1970s found that prior expenditures for beneficiaries who enrolled in prepaid groups were significantly lower than for other beneficiaries (32,120,121, 278). These results may not be generalizable to other plans or to the situation under widespread capitation payment. But depending on risk-sharing arrangements and capitation rates, biased selection, either from beneficiaries' choices or plans' marketing practices, could result in Medicare's paying much more than the actual cost for a low-cost beneficiary and much less than the actual cost for a high-cost beneficiary in a risk-sharing plan. As discussed in option 8, research is underway to refine the AAPCC, which is now used as the basis of capitation payment. A model that incorporates information on prior hospital use has proved superior to others and is being tested in a current demonstration project (278).

Studies have consistently found that practices paid by capitation delivered care of at least as good and usually better quality than comparison groups (97,107,194,279,404,579). Although no study examined specifically the quality of care to Medicare beneficiaries, the National Medicare Competition Evaluation funded by HCFA is evaluating quality (411,541). Problems related to timely enrollment and disenrollment have been identified in certain Florida plans (476), which are part of the evaluation. Quality is of particular concern for Medicare beneficiaries because their medical and social needs may differ from those of employed populations and Medicaid enrollees (194) and may affect their ability to cope with unfamiliar administrative arrangements. However, once a beneficiary becomes familiar with plan procedures, capitation payment would entail less paperwork than fee-for-service payment.

Some observers have theorized that plans paid by capitation would not skimp on treatment of severe illness for which definitive treatment is available, and that they might excel in reassuring worried-well patients (223). But people who are subtly sick may experience delays in the diagnosis of potentially serious disease if plan physicians face bureaucratic complexities in ordering diagnostic workups or in obtaining tests from outside the plan. In fact, delays in diagnosing colorectal cancer were found for enrollees of a prepaid group compared to fee-for-service patients (150).

Given the incentives of capitation payment, delays might also occur in resorting to a more expensive treatment for a condition for which there were less costly alternative therapies, such as initially using ESWL instead of surgery for renal stones or delaying the removal of cataracts. Delaying surgery might constitute poorer quality care if the person's ability to function was impeded, but delays can have health benefits if the surgery is ultimately avoided or if the diagnosis is refined. Greater delay would be expected in adopting an expensive technology such as MRI while its demonstrated advantages over alternative modalities were fairly limited (234). As long as use inside the plan was low, the plan would be likely to contract for such services outside the plan.

Risk-sharing plans know in advance the size of the population for which they are responsible and have financial incentives to take advantage of economies of scale in locating and using expensive equipment. These incentives would promote greater regionalization of expensive equipment. There would be incentives to send more tests to centralized clinical laboratories and to perform fewer tests in physician offices. Such a shift has the potential to improve the quality of test results since State standards may be more likely to apply to central laboratories, and appropriately trained technicians may be more likely to perform the tests.

Compared to other insured people, HMO enrollees have had no consistent pattern of vaccinations, preventive technologies considered cost-effective (483,576). It is unlikely that pneumococcal vaccination, for example, would be higher under capitation because of barriers to use that precede payment.

Option 15: Mandate the Medicare program to fund demonstrations of capitation payment to geographic fiscal intermediaries.

All of Medicare's experience with capitation payment has been with individual plans. This option would require Medicare to try an alternative approach. In the context of demonstration projects, Medicare could pay fiscal intermediaries (for example, carriers or PROs) who were willing to assume the financial risk for beneficiaries' care in a geographic area (70,564). The intermediary-at-risk could negotiate arrangements with area providers and offer beneficiaries choices. Continuation of present Medicare coverage and cost-sharing provisions would remain an option. Capitation payment would give a geographic fiscal intermediary financial incentives to control expenditures for beneficiaries' care by persuading beneficiaries to choose lower cost alternatives, such as HMO enrollment or PPO providers, by negotiating discounts with providers in a PPO or HMO, or by pursuing more stringent review of fee-for-service claims (70).

From the perspective of the Medicare program, the problem of establishing equitable rates for different categories of beneficiaries would be mitigated under this option because the intermediary would be at risk for all the beneficiaries in an area. However, random variations in beneficiary expenditures from year to year could entail substantial amounts. It would be possible for Medicare to share the risk with the carrier by paying the carrier a "risk premium," by permitting the carrier to establish a risk stabilization fund to buffer annual gains and losses, or by specifying that Medicare would share a certain percentage of the annual gains and losses. Different arrangements could be tested in the demonstrations.

Even if there were some retrospective adjustments based on actual expenditures, the Medicare program could benefit from being better able to predict total annual expenditures. Beneficiaries might also gain to the extent that plans and providers sought their patronage by reducing cost-sharing liabilities or by increasing benefits.

Demonstrations of capitation payment to geographic fiscal intermediaries would permit Medicare to evaluate the implications of this payment alternative for beneficiaries' access to and quality of care. Both the carriers and providers who were at risk would have financial incentives to control use, perhaps at the expense of quality and access. The experience that Medicare gained from the demonstrations would permit the program to identify problem areas and to design methods of monitoring and assuring quality and access.

Demonstrations would also enable the Medicare program to identify and seek solutions to matters concerning enrollment of beneficiaries, establishing and updating capitation rates, and assignment for fee-for-service providers. Either Medicare or the intermediary could conduct an open enrollment period. One possibility to inject

Photo credit: General Electric Medical Systems

Expensive technologies with substantial fixed costs, such as magnetic resonance imaging (MRI), would be more likely to be regionalized if their services were included in payment for packages of services or in capitation payment, or if payment rates were lowered under fee-for-service payment.

greater competition would be for the geographic fiscal intermediary to contract with HMOs and other CMPs that it did not sponsor and offer them as options to beneficiaries.

Establishing a geographic intermediary-at-risk would vest substantial market power in one entity. Once established, the intermediary would have a strong negotiating position with Medicare because of the difficulty for Medicare if the intermediary opted out after a few years. The intermediary's control over sizable funds would give it great leverage in negotiating with plans and providers. An undesirable consequence would be that the carrier might use its market power to drive out competitors.

Monitoring and assuring quality and access during the demonstration would be important to protect the welfare of beneficiaries. These activities would also be difficult. Past quality assurance programs have concentrated on overprovision of services because of the financial incentives of fee-for-service payment. By contrast, quality assurance under capitation payment would have to be directed toward underprovision of services, a field in which little experience exists (see option 9).

CONCLUSION

Each of the four strategies to change Medicare payment for physician services has advantages, disadvantages, and uncertain implications. Capitation payment under a mandatory voucher system is most likely to be able to control Medicare expenditures without increasing beneficiaries' expenditures. But since the technology of setting capitation rates for different categories of beneficiaries is not well developed, the rate structure could unintentionally contain incentives for payment recipients to seek some beneficiaries as enrollees and to avoid others. The capitation payment recipient would be at financial risk for the use and cost of covered services.

Payment based on fee schedules would give Medicare greater control over price, but changes in total expenditures would depend on changes in the volume and types of services as prices were constrained. Continuing CPR payment and lowering Medicare's approved charges might initially reduce the growth in Medicare expenditures, but this effect would be unlikely to be sustained. Payment for packages of services could theoretically enable Medicare to limit expenditures for packaged services, but total expenditures would depend on the effects of case-mix adjustment and on the extent to which related services were used outside the packages. Moreover, little or no experience exists with payment for packages that include the services of different physicians.

The effects of different payment alternatives on quality of care would depend on the level and unit of payment and on how appropriately services are now being used. Some services, especially procedural ones, such as certain clinical laboratory services and some surgeries, now tend to be overused. If reductions in the levels of payment and more global units of payment led to lower use of such services, quality could be enhanced. On the other hand, quality would fall if lower payment levels or revenue constraints led to reductions in services and delays in diagnosis and treatment that hurt beneficiaries' health.

Quality assurance is a concern for all the payment alternatives, but the direction of concern differs for specific alternatives—from overuse of services with fee-for-service payment to underuse with payment for packages of services and capitation payment. As the unit of payment and scope of services become more comprehensive, financial incentives for efficiency apply across a greater range of services, and incentives for underuse and concern about adverse effects on quality of care also increase. Under both capitation payment and payment for packages of services, providers that underserve beneficiaries run the risk of losing patients to other practices. Although capitation plans have apparently provided medical care at lower cost while maintaining quality at levels equal to or better than comparison practices, it is uncertain whether new plans, which differ in size, sponsorship, organization, and risk-sharing arrangements, will achieve similar results.

Since assignment rates decline with lower payment rates, lowering approved charges under CPR would decrease beneficiaries' financial access to the physicians or services affected. Payment for packages of services would require mandatory assignment, whose effect on access is uncertain. Capitation payment has reduced enrollees' direct financial barriers to securing care, but new plans might differ in coverage of services and cost-sharing provisions. The ongoing evaluation of capitation plans with Medicare enrollees will indicate whether beneficiaries have had difficulty dealing with plan bureaucracy.

There are no documented problems with present access to care for specific beneficiary groups. But an important factor in future access under all of the payment alternatives discussed in this report would be the level of Medicare payment. There is the possibility that if payment rates were pushed too low, providers would increasingly refuse to accept Medicare's payment as payment in full. Some beneficiaries would be able to bear higher out-of-pocket expenses. But poorer beneficiaries would have restricted access to medical care and perhaps untoward effects on their health.

Payment reform that lowers the level of payment or limits the revenue to a provider would encourage the development and use of cost-saving technologies and of less expensive sites of care.

Such reforms would also stimulate regionalization of expensive technologies, perhaps with a concomitant decrease in beneficiaries' geographic access. Expensive new technologies, such as MRI, might be adopted more slowly than at present. Within packages and under capitation payment, new cost-increasing technologies would be more likely to be used in cases where their efficacy had been documented. The use of preventive technologies such as pneumococcal vaccination might increase with higher levels of payment or with payment for a designated package of preventive services. To the extent that physicians' and beneficiaries' attitudes toward prevention account for low levels of use of even cost-effective preventive services, however, physician payment reform would not change the use of such services.

The policy options that involve the least change from present CPR payment or that call for research and demonstrations could be undertaken fairly quickly, within 1 or 2 years. This applies to four of the five general options: reducing the number of payment codes, adopting volume controls, mandating assignment, and establishing a physician payment commission. All of the options under the strategy of continuing present payment arrangements could also be implemented in a short time: reducing approved charges and giving beneficiaries the option of PPOs, adopting fee schedules for specific services, increasing funding for research and demonstrations on capitation rates, and funding demonstrations of quality assurance under capitation payment. Fee schedules for the strategy of payment based on fee schedules could also be constructed quickly if they were based on carriers' historical charge data. All of the options in the strategy of payment for packages of services could be undertaken in a short time, because they all relate to developing further information on packaging: investigating payment for special-procedure packages, conducting research on episodes of care and case-mix measures, and instituting demonstration projects to pay for inpatient physician services by DRGs. Within the strategy of capitation payment, a demonstration of capitation payment to geographic fiscal intermediaries could begin in the near future. HCFA is currently funding or examining most of the research and demonstration projects discussed in the options. What Congress would gain by mandating certain avenues of research or demonstration is an emphasis on a certain payment strategy.

Options that depend on further analysis, especially regarding resource costs and relative value scales, would require a longer period of time to carry out. The general option to reduce payment differentials among certain services and the construction of fee schedules based on estimates of resource costs or physician involvement fall into this category. Capitation payment for all beneficiaries either could be implemented quickly using present payment rates based on the AAPCC or delayed until payment rates were more refined and recent demonstration projects had been evaluated. For the most part, payment for packages of services, as opposed to research or demonstrations on packaging, is not ready to be implemented because payment categories have not been developed or tested.

Although it would be most reasonable for Congress to consider policy options related to the payment strategy that it wished to adopt, it would be possible to adopt other options or strategies while awaiting further information from research and demonstration projects that would guide the ultimate decision. The general options would be consistent with the three payment alternatives that would continue to base payment on individual services or packages of services. Although capitation payment would render moot most of the issues addressed by the general options, it would still be feasible to move from any of the general options to general capitation payment. The options to continue CPR as the mainstream payment method could be undertaken in the same spirit. Within this set of options, Congress could emphasize measures related to an alternative payment method if it was interested in moving in that direction.

The strategy of payment based on fee schedules instead of CPR would also be consistent with ultimately adopting payment for packages of services or general capitation payment. The effort and expense to implement payment changes associated with fee schedules would then have to be repeated for the new payment alternative. But payment based on fee schedules could be a bridge for determining rates for broader packages of services. And under general capitation payment, payment based on fee schedules instead of CPR could be the fee-for-service alternative guaranteed to beneficiaries who wished to continue with that approach.

It would be technically feasible but more difficult to move from some of the packaging options to strategies to adopt other payment alternatives (574). Paying for some or all inpatient physician services by DRGs would prompt organizational and financial changes within the physician community and within hospitals that would have to be disrupted if payment based on fee schedules or general capitation payment were subsequently adopted. Similarly, it would be possible with additional effort and expense to move from general capitation payment to payment based on fee schedules or payment for packages of services. But general capitation payment would most likely stimulate both beneficiaries and providers to align with plans, and the substitution of a different payment alternative would be disruptive to those relationships and to the individuals involved.

Chapter 2

Physician Payment Under the Medicare Program: Problems and Changing Context

> You would be surprised at the number of years it took me to see clearly what some of the problems were which had to be solved . . . Looking back, I think it was more difficult to see what the problems were than to solve them.
>
> —*Charles Darwin*

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Chapter 2

Physician Payment Under the Medicare Program: Problems and Changing Context

INTRODUCTION

The law establishing the Medicare program was enacted in 1965 as a means to enhance access of elderly people to hospital and physician services by providing insurance that would reduce the out-of-pocket costs of such care. In this regard, the program has largely succeeded. This success, however, has come at an increasing cost to the Medicare program. Furthermore, elderly people have not been immune to increases over time in out-of-pocket costs for Medicare premiums, deductibles,[1] coinsurance, and "nonassigned" liability for covered services—not to mention the total costs for those health care services that are not covered by Medicare. Finally, there is some concern that the program does not provide equal financial protection to all beneficiaries. In particular, there are perceived imbalances by region, location within region, type of service, and other factors not related to eligibility.

The Medicare program represents a major part of U.S. health insurance coverage, which has increased greatly over the past generation. Although health insurance has improved people's access to medical care, it has also fueled the use and cost of medical technology (129,137). The nature of insurance coverage and the specific payment methods that have been used by Medicare and other third-party payers have dulled the sensitivity of consumers, physicians, and other providers to cost considerations. The result has often been inappropriate technology use and higher expenditures than warranted for the health benefits received (483).

Until recently, increases in hospital expenditures under Part A of Medicare have attracted the most attention and concern because hospital expenditures have accounted for the largest share of total Medicare expenditures and have been growing at a high rate. However, the increase in Medicare hospital expenditures has slowed since fiscal year 1983; and in October 1983, Medicare began paying for inpatient operating costs by diagnosis-related groups (DRGs). For fiscal year 1984, expenditures grew faster for physician and other services under Part B than under Part A or indeed for any other component of the Federal budget (401).

As attention has turned to expenditures for Part B services, Medicare's method of paying for physician services according to customary, prevailing, and reasonable (CPR) charges has come under particular criticism. In fact, the inherent inflationary bias in the CPR approach has been demonstrated both theoretically (151) and empirically (189). This situation contrasts with the "financial" goals posed for the Medicare payment system of achieving at least *predictable* and preferably *contained* levels of beneficiary and program expenditures.

Other developments in the medical care sector also affect Medicare's payment of physician services. Changes taking place in the supply of physicians and the organization of their practices may result in a more competitive market for physician services and a new environment for Medicare program payment policies.

This chapter reviews the increases in Medicare expenditures for physician services along with other current issues in physician reimbursement in the Medicare program. It also identifies current developments outside of Medicare that may affect physician payment. The discussion in this chapter reviews the context for addressing both Medicare's physician reimbursement issues and the other general objectives of the Medicare program: promoting access of Medicare beneficiaries to health care services of an acceptably high quality delivered in a cost-effective manner.

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[1] In constant dollar terms, there has been a decline in premiums and the deductible over time, but total real out-of-pocket costs for beneficiaries have increased.

EXPENDITURES FOR PHYSICIAN SERVICES

In 1984, the Nation spent $75.4 billion on physician services (507). This was an increase of 9.3 percent over the previous year, exceeding the rate of growth in expenditures on all health care services and supplies in general and the growth in hospital expenditures in particular. Medicare expenditures on physician services in 1984 were $14.6 billion, or 19.3 percent of the total. All Federal expenditures for physicians services in 1984 were $16.9 *billion*, compared to an estimated $200 *million* in 1965. As a proportion of all expenditures for physician services since that time, Federal expenditures have increased from 1.8 to 22.4 percent (165,507).

Medicare Expenditures for Physician Services

Method of Physician Payment Under Medicare

The predominant method of physician payment under the Medicare program is fee for service. Although some Medicare funds for physician services are paid to hospitals and other institutions (e.g., health maintenance organizations (HMOs)) that may employ salaried physicians or retain physicians on other than a fee-for-service basis, such arrangements represent a very small fraction of the Medicare business. Of Part B incurred allowed charges for physician services in the year ending June 30, 1983, 96 percent originated with individual patient bills submitted on the standard physician claims forms for fee-for-service practice (553).[2]

Reasonable or approved charges for those claims are determined through the CPR charge determination process, which is described in appendix C. Medicare's "approved charges" for any service are limited to the lowest of the physician's billed charge, the customary charge for the service based on that physician's prior billings to the Medicare carrier, or the prevailing charge for that service based on comparable physicians' prior billings to the carrier for the same service as adjusted, if necessary, by the Medicare Economic Index (MEI). As a result, Medicare carriers (as most large private physician insurance programs) typically do not approve the full amount of a physician's charges for a service provided to a Medicare patient. In the first quarter of 1985, the average reduction due to the CPR process was 26.2 percent (535). For a bill with submitted charges of $100, therefore, approved charges would average $73.80. (The carrier would pay the physician 80 percent of the approved charges, or $59.04, less any unpaid patient deductibles.) Contrary to the conventional wisdom, not all physician claims are submitted at amounts that exceed the CPR limits. Through the end of calendar year 1984, 18.3 percent of all claims were submitted at or below the CPR limits (535).

Physicians are paid for their services to Medicare beneficiaries either directly by the beneficiary or by a Medicare carrier, depending on whether the physician "accepts assignment." By statute, it is only the Medicare beneficiary who is entitled to be paid a reimbursement benefit. That benefit is equal to 80 percent of the approved charge for the service once the beneficiary has approved bills that exceed the annual deductible. Instead of being reimbursed directly, the beneficiary may elect to assign the benefit to the physician who provided the service. If the physician accepts assignment, he or she must accept the approved charge as payment in full (and may bill the beneficiary for the 20-percent coinsurance and any remaining deductible). If assignment is not accepted, the physician's expected full payment is not bound by the approved charge, and the beneficiary is liable for any difference between the physician's actual charge and the allowed charge, in addition to the coinsurance and deductible. Medicare's approved charge, however, is determined without regard to assignment.

Prior to October 1, 1984, each physician was free to make assignment decisions on a case-by-case basis.[3] Passage of the Deficit Reduction Act of 1984 (Public Law 98-369), however, introduced the concept of Medicare "participating physicians" along with a 15-month freeze on customary and prevailing charges for all physicians and a freeze on submitted charges by "non-par" physicians (i.e., physicians who did not elect to become participating physicians). A physician who elected to become a participating physician agreed to accept assignment for all Medicare claims for the next 12 months. In return, that physician would be listed in a directory of participating physicians available to beneficiaries, and would be allowed to increase billed charges. According to the provisions of the Deficit Reduction Act, participating physicians would receive higher approved charges in fee screen year[4] 1986, while the approved charges of the non-pars in fee screen year 1986 would not increase appreciably beyond the fee screen year 1984 levels.[5] Although non-par physicians are not required to accept assignment on 100 percent of their claims, they may continue to accept assignment on a case-by-case basis.

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[2] Comparable statistics are not available with respect to the volume of Part A funds used for physician reimbursement. Although much of this Part A funding will be used to pay salaried physicians, hospitals may bill carriers for services performed by salaried physicians.

[3] In cases where a physician treated a patient who was eligible for both Medicare and Medicaid, accepting assignment was mandatory. And, in the case where a physician provided more than one service to a beneficiary on the same day, assignment would have to be ac-

Participating physicians represent 29.8 percent of all physicians who receive payment under the Medicare program (518). In the first quarter of 1985, participating physicians submitted 36.1 percent of all physician claims to Medicare and 56.5 percent of all assigned claims. Participating physicians accounted for 34.9 percent of covered charges for physician services (537).

Composition of and Growth in Medicare Expenditures for Physician Services

In fiscal year 1984, Medicare carriers processed 229 million Part B claims (527), approximately 7 claims per enrollee. The average claim included charges for covered services of $128.74; average approved charges per claim were $97.61. Total claims volume has grown at an average annual rate of 12.6 percent since 1968, while annual growth in claims per enrollee has averaged 9.4 percent (see table 2-1).

Eighty-five percent of Part B expenditures are for physician services, with the bulk of the remainder going to outpatient departments (553). As shown in figure 2-1, the expenditures are concentrated in the areas of medical care and surgery, at 37.3 and 33.7 percent, respectively, of total approved charges in 1983 (69). Diagnostic radiology and diagnostic laboratory services represented 8.4 and 8.0 percent, respectively, of total approved charges, with all other physician services combining to total 12.6 percent.

Most of the expenditures for physician services are for services provided in the hospital. In 1983, the most recent year for which estimates are available, 61.9 percent of all approved charges were

Table 2-1.—Medicare Part B Enrollment, Reimbursement Amounts, and Claims Volume, Fiscal Years 1967-84 (in millions)

Fiscal year	Number of beneficiaries	Total dollars	Number of claims	Claims per beneficiary
1967	17.8[a]	$ 664	19.7	1.1
1968	18.0	1,390	34.2	1.9
1969	18.8	1,645	39.3	2.1
1970	19.3	1,979	43.8	2.3
1971	19.7	2,035	49.1	2.5
1972	20.0	2,255	54.5	2.7
1973	20.4	2,391	58.5	2.9
1974	22.6	2,874	68.0	3.0
1975	23.3	3,765	81.4	3.5
1976	24.1	4,672	93.5	3.9
TQ[b]		1,269		
1977	24.8	5,867	110.0	4.4
1978	25.6	6,852	122.1	4.8
1979	26.3	8,259	136.2	5.2
1980	26.9	10,144	154.5	5.7
1981	27.5	12,345	171.7	6.2
1982	28.0	14,806	188.3	6.7
1983	28.5	17,487	208.4	7.3
1984	29.0	19,473	229.0	7.9

[a] After 1977 enrollment is as of June 30, not the end of the fiscal year, Sept. 30.
[b] Transition quarter.

SOURCES: **Enrollment, years ending June 30 and incurred reimbursement amounts:** U.S. Federal Supplementary Medical Insurance Fund, Board of Trustees, "1985 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund," Washington, DC, Mar. 28, 1985. **Claims volume:** U.S. Department of Health and Human Services, Health Care Financing Administration, Bureau of Data Management and Strategy, Division of Reports and Analysis, Compiled Carrier Workload Reports, 1985.

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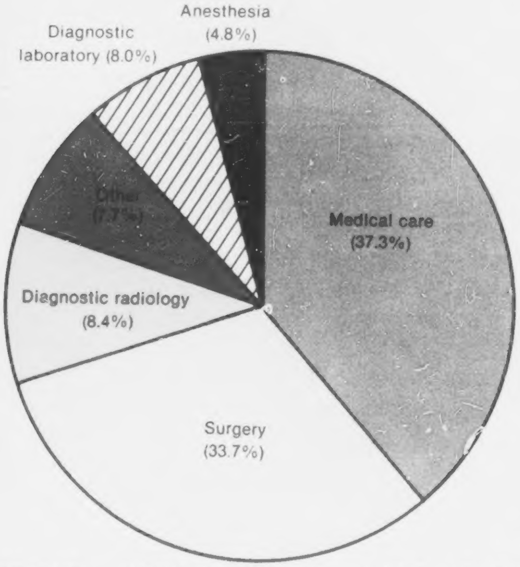
cepted on all of those services or none of the services. The physician in that case could not accept assignment for only some of the services. Beginning in fiscal year 1985, however, assignment could be accepted for laboratory services only without the requirement that assignment be accepted on all services if it was accepted on any service.

[4] A fee screen year is the calendar period during which a particular year's CPR limits are in effect. Prior to the Deficit Reduction Act of 1984 (Public Law 98-369), fee screen years began on July 1 of a calendar year and continued through June 30 of the next year. As of Sept. 30, 1984, fee screen years run from Oct. 1 through Sept. 30 of the following year, with fee screen year 1985, for example, beginning on Oct. 1, 1984.

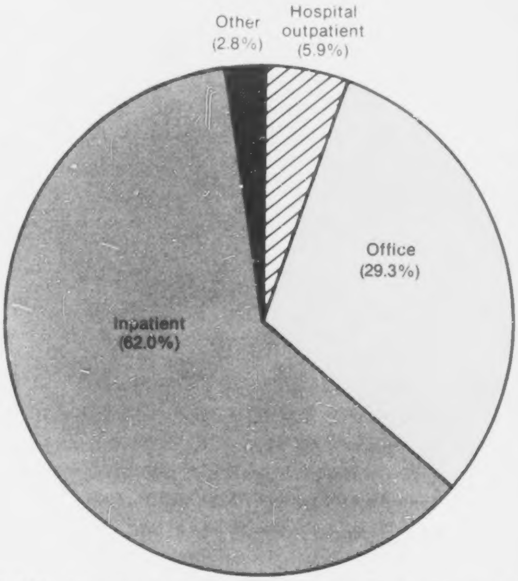
[5] Because the freeze limits were based on the charges from the last 3 months of fee screen year 1984, it is conceivable that non-pars who had increased their fees between July 1, 1983, and Mar. 30, 1984, would receive increases in their customary charges in spite of the freeze.

Figure 2-1.—Percent Distribution of Medicare Approved Charges for Physician Services by Type of Service, 1983



SOURCE: I. Burney and G. Schieber, "Medicare Physicians' Services: The Composition of Spending and Assignment Rates," *Health Care Financing Review*, forthcoming.

Figure 2-2.—Percent Distribution of Medicare Approved Charges for Physician Services by Place of Service, 1983



SOURCE: I. Burney and G. Schieber, "Medicare Physicians' Services: The Composition of Spending and Assignment Rates," *Health Care Financing Review*, forthcoming.

provided in an inpatient setting. Physicians' offices and outpatient departments were the second and third ranked sites, with 29.2 and 5.9 percent, respectively, of approved charges (see figure 2-2). In terms of the most significant place of service/type of service combinations, 27.5 percent of total approved charges were for surgical services in a hospital, 18.8 percent were for medical services in a hospital, and 15.5 percent were for medical services in a physician's office (see table 2-2).

Internal medicine was the specialty that received the highest proportion of Medicare physician expenditures, accounting for 20.4 percent of total approved charges in 1981 (69). The medical specialties as a whole accounted for 28.5 percent of 1981 approved charges, and general and family practice combined accounted for an additional 11.5 percent. Surgical specialties accounted for 34.8 percent of total approved charges, with the services of general surgeons representing 9.6 percent of the total and those of ophthalmologists representing 8.2 percent. The distribution of specialists' charges by type of service is unremarkable, with general and family practice and most medical specialties billing most of their charges for medical care and most surgical specialties billing most for surgery. With few exceptions, most specialties have higher total billings for services provided in the hospital than in an office (69). Two specialties, however, received more than 50 percent of 1981 approved charges for services provided in their offices: otolaryngology (50.3 percent) and dermatology (91.1 percent).

In spite of the CPR limits or, as some would have it, because of them, approved charges for physician services per aged Medicare enrollee increased by 591 percent between fiscal year 1968 and fiscal year 1983. Medicare Part B benefit payments totaled $1.4 billion during fiscal year 1968; 16 years later, benefit payments had increased to more than $19.5 billion, an increase of 1,400 percent (553).

These increases were due to a variety of factors in addition to the changes in approved charges, including changes in enrollment, changes in physicians' billed prices, and changes in utilization. In order to explore these increases, one can ex-

Table 2-2.—Percent Distribution of Medicare Approved Charges for Physicians' Services, by Combinations of Place and Type of Service, 1983

	Place of service							
Type of service	All	Office	Inpatient	Home	OPD[a]	Lab	SNF[b]	Other
All types	**100.0**	**29.2**	**61.9**	**0.6**	**5.9**	**0.3**	**1.3**	**0.6**
Medical care	**37.3**	15.5	18.8	0.5	1.1	*	1.1	0.3
Surgery	**33.7**	3.8	27.5	*	2.4	*	*	*
Consultation	**3.8**	0.7	2.9	*	0.1	*	0.1	*
Diagnostic radiology	**8.4**	3.4	3.7	*	1.3	*	0.1	*
Diagnostic laboratory	**8.0**	5.1	2.2	*	0.4	0.3	*	*
Radiation therapy	**1.2**	0.4	0.2	*	0.5	*	*	*
Anesthesia	**4.8**	*	4.7	*	0.1	*	*	*
Assistant-at-surgery	**1.8**	*	1.8	*	0.1	*	*	*
Other medical	**0.9**	0.4	0.1	0.1	0.1	*	*	0.3

[a]OPD = Outpatient department
[b]SNF = Skilled nursing facility
* = Less than 0.05%

SOURCE: I. Burney and G. Schieber, "Medicare Physicians' Services: The Composition of Spending and Assignment Rates," *Health Care Financing Review*, forthcoming.

amine the changes in Medicare expenditures by partitioning expenditures as follows:

$$\text{Total Medicare expenditures} = \text{number of beneficiaries enrolled} \times \text{per capita use} \times \text{average physician prices}$$

From this it also follows that:

$$\text{Change in total expenditures} = \text{change in enrollment} + \text{change in utilization} + \text{change in physician prices}^{6}$$

Since the beginning of the Medicare program, enrollment has grown at an average annualized rate of 2.4 percent for the aged population and 3.0 percent in aggregate (553). (The relatively small disabled Medicare population grew at an annualized rate of 7 percent per year from 1974 through calendar year 1981, after which enrollment declined.) The annual increase in the enrollment of the aged population has been so nearly constant—just in excess of 2 percent—that year-to-year fluctuations in reimbursements are almost entirely derived from changes in utilization or physician prices.

From June 30, 1967, to June 30, 1983, approved charges per aged enrollee increased 591 percent, or 11.5 percent per year. The increase in approved charges per disabled enrollee from June 30, 1974, to June 30, 1983 was 390 percent, or 18.3 percent per year. Further, as shown in table 2-3, through fiscal year 1983, the aggregate increases in allowed charges per enrollee had been accelerating. With only two exceptions, the year-to-year total increase in recognized charges per aged enrollee increased in every year between 1970 and 1983 (553). Through June 30, 1970, the increase was 4.0 percent; by 1974, it was 8.9 percent; in 1978, 13.3 percent; in 1980, 16.0 percent; and in 1983, charges per enrollee increased 20.6 percent.[7] From 1978 onward, Medicare's approved charges per enrollee have consistently increased faster than total per capita expenditures for physician services in the United States (see figure 2-3).

Of the 1968 to 1983 annualized increase of 11.5 percent per year, 6.9 percent was due to price increases and 4.6 percent was due to residual factors that include changes in utilization. Although there are no consistent trends in either price changes or the residual factors analogous to the accelerating change in approved charges per enrollee, the rate of price increase rose substantially

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[6] Although conceptually accurate, in practice it is difficult to completely distinguish changes in utilization from changes in price. For example, the most common measure of physician fee inflation is the Professional Services Index of the Medical Care Component of the Consumer Price Index. This index is computed by pricing a fixed market basket of physician procedures from a fixed cohort of roughly 700 physician practices. As a result, the index reflects neither changes in the mix of physician services available in the market nor changes in the mix of physician practices active in the market. Therefore, simply "deflating" physician expenditures with the index may not yield an entirely accurate estimate of changes in utilization.

[7] Comparable fiscal year 1984 estimates will not be available until the preparation of the Federal Supplementary Medical Insurance Trustees report for 1986. In fiscal year 1984, the aggregate reimbursements for aged Medicare beneficiaries increased 12 percent over the previous fiscal year, compared to increases in excess of 19 percent in each of the 5 preceding fiscal years (533).

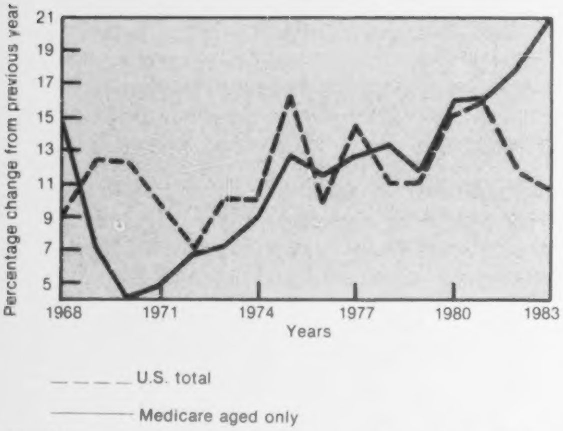
Table 2-3.—Components of Increases in Total Medicare Approved Charges for Physician Services per Aged Enrollee, 1967-83 (in percent)

Year	Price change factors				Residual factors			Total
		CPR fee screens						
(ending June 30)	CPI[a]	Cumulative	Annual	Net	Gross	Denials	Net	increase
1967	7.6	−2.6						
1968	5.9	−3.6	−0.6	5.3	10.8	−1.4	9.4	14.7
1969	6.2	−5.0	−1.5	4.7	2.9	−0.4	2.5	7.2
1970	6.7	−7.5	−2.8	3.9	3.2	−3.1	0.1	4.0
1971	7.5	−10.1	−3.0	4.5	3.6	−3.2	0.4	4.9
1972	5.2	−11.2	−1.2	4.0	2.3	0.4	2.7	6.7
1973	2.6	−11.7	−0.5	2.1	5.7	−0.6	5.1	7.2
1974	5.0	−13.2	−1.6	3.4	6.1	−0.6	5.5	8.9
1975	12.8	−16.2	−3.6	9.2	3.8	−0.3	3.5	12.7
1976	11.4	−18.6	−2.9	8.5	2.9	0.1	3.0	11.5
1977	10.2	−19.5	−1.0	9.2	3.3	0.1	3.4	12.6
1978	8.9	−19.4	0.5	9.4	3.8	0.1	3.9	13.3
1979	8.6	−20.0	−0.5	8.1	3.9	−0.3	3.6	11.7
1980	11.5	−22.1	−2.4	9.1	6.8	0.1	6.9	16.0
1981	11.1	−24.5	−2.8	8.3	7.1	0.7	7.8	16.1
1982	9.9	−23.9	1.5	11.4	5.9	0.5	6.4	17.8
1983	8.2	−23.4	1.6	9.8	10.9	−0.1	10.8	20.6

[a] CPI = Medical Care Component of the Consumer Price Index.

SOURCE: U.S. Federal Supplementary Medical Insurance Trust Fund, Board of Trustees, "1985 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund," Washington, DC, Mar. 28, 1985.

Figure 2-3.—Percent Growth in U.S. and Medicare per Capita Physician Expenditures, 1968-83



SOURCE: M. Freeland, Bureau of Data Management and Strategy, Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, personal communication, Apr. 4, 1985; and U.S. Federal Supplementary Medical Insurance Trust Fund, Board of Trustees, "1985 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund," Washington, DC, Mar. 28, 1985.

after 1974, and the rate of increase in the residual factors also rose substantially after 1979.

Increases in expenditures have not been uniform across physician specialties or the types of services that they provide. Data have been analyzed from the 5 percent Bill Summary Record sample to disaggregate changes by specialty and type of service over the period 1975 to 1982 (133). Some of these data are reproduced in table 2-4. (Over this time period, total physician expenditures for the aged increased by 18 percent: 2 percent from enrollment increases, 10 percent from increases in reimbursements per service, and 6 percent from increases in services per enrollee.) Specialists in cardiovascular disease saw their Medicare reimbursements rise by 26 percent in total, half from increases in service volume, half from increases in reimbursements per service. Ophthalmologists and general surgeons also enjoyed comparable increases—of 13 percent—in reimbursement per service, while many other specialties saw increases in reimbursements per service of 9 or 10 percent.

Increases in the provision of services appeared to be much more variable across specialties. Pathologists' services increased by 21 percent over that time period, while general and family practitioners' services increased only 2 percent and those of general surgeons increased but 1 percent (133).

U.S. Expenditures for Physician Services

As indicated earlier, Medicare is only one player in the market for physician services, and

Table 2-4.—Annual Percentage Increases in Medicare Payments for Physicians' Services for Aged Beneficiaries, 1975-82

Specialty	Total reimbursements	Services	Reimbursements/ service
Cardiology	+26%	+13%	+13%
Pathology	25	21	4
Ophthalmology	22	9	13
Radiology	22	13	9
Podiatry	20	11	9
Dermatology	20	10	10
Otology/laryngology/rhinology	17	7	10
Orthopedic surgery	17	7	10
Internal medicine	17	7	10
Urology	14	5	9
General surgery	14	1	13
General practice/family practice	12	2	10

SOURCE: L. Etheridge and D. Juba, "Medicare Payments for Physicians' Services," *Health Affairs* 3(4):132-137, Winter 1984.

Part B physician service payments in 1984 were 19.3 percent of all expenditures for physician services (507). As a result, trends in that larger physicians' market must be observed to understand both the source of some of Medicare's problems and the prospects for their resolution.

Much like Medicare expenditures for physician services, expenditures for physician services in general are a function of the size of the population, per capita use of physician services, and price per service. Hence the change in physician expenditures is a function of changes in prices, changes in per capita use, and changes in the population. The Health Care Financing Administration (HCFA) has developed internal estimates to further partition price changes into those due to price changes in the general economy and price changes in physician services that differ from those in the general economy. These estimates are reported in table 2-5.

In 1965, an estimated total of $8.5 billion was spent on physician services in the United States (165). By 1984, that expense had expanded more than eightfold to $75.4 billion, a rate of growth of 11.5 percent per year. The years of the largest growth in physician expenditures occurred in 1969 to 1971, prior to the imposition of the Economic Stabilization Program; in 1976 to 1977, arguably as a result of the malpractice crisis of 1976; and during the inflationary period of 1979 to 1981.

In fact, just over half of the growth in physician expenditures since 1965 can be ascribed to inflation in the general economy as measured by the Gross National Product (GNP) deflator. Physician fee inflation has exceeded inflation in the general economy with the exception of the 1972 to 1974 period of the Economic Stabilization Program. Since 1965, the total excess has been 39 percent, averaging just less than 2 percent each year (152). The difference between the GNP deflator and the professional services index of the medical care component of the Consumer Price Index (CPI) reached a high of 6 percentage points between 1975 and 1976. Since 1980, this excess inflation has been accelerating as medical inflation has continued while general inflation has declined. Between 1982 and 1983, medical inflation was twice the rate of inflation in the general economy. Physician fee inflation in excess of general inflation contributed 15 percent of the total growth in physician expenditures since the beginning of the Medicare program (152).

The rate of growth in the general population has been fairly constant since 1965, at approximately 1 percent annually. Per capita use of physician services has increased only slightly since 1965 and exhibited actual declines from 1980 through 1983. Together, growth in the use of physician services has represented just under 10 percent of the total growth in expenditures for physician services since 1965 (152).

Finally, one-quarter of the growth of physician expenditures can be ascribed only to the residual category. In the framework of the National Health Accounts (165), this residual can be interpreted as either an increase in the intensity or complex-

Table 2-5.—U.S. Physician Expenditures and Factors Accounting for Growth, 1965-83

		Percent change from previous year					
Year	Total dollars (in billions)	Total dollars	GNP deflator[a]	Physician fee inflation[b]	Use of physician services per person	Change in population	Other factors
1965	8.5	NA[c]	NA	NA	NA	NA	NA
1966	9.2	8.2	3.2	2.5	−3.8	1.2	5.1
1967	10.1	9.8	2.9	3.8	0.0	0.9	2.1
1968	11.1	9.9	4.7	1.2	−1.8	1.1	4.7
1969	12.6	13.5	5.3	1.7	1.6	1.0	3.9
1970	14.3	13.5	5.5	2.1	7.9	1.1	−3.1
1971	15.9	11.2	5.2	1.9	4.9	1.3	−2.1
1972	17.2	8.2	4.4	−1.0	0.8	1.1	2.9
1973	19.1	11.0	5.8	−2.4	0.7	0.9	6.0
1974	21.2	11.0	8.7	0.3	−0.7	0.8	1.9
1975	24.9	17.5	9.8	3.0	1.7	1.0	1.9
1976	27.6	10.8	5.5	6.0	−1.4	1.0	−0.2
1977	31.9	15.6	6.1	3.4	−2.4	1.0	7.5
1978	35.8	12.2	7.5	0.9	−1.1	1.0	4.0
1979	40.2	12.3	8.8	0.5	−0.2	1.1	2.1
1980	46.8	16.4	9.7	1.3	0.8	1.2	3.5
1981	54.8	17.1	10.1	1.3	−2.4	1.0	7.1
1982	61.8	12.8	6.2	3.3	−1.9	1.0	4.1
1983	69.0	11.7	3.9	3.9	−0.6	1.0	3.5
1965-83							
Total change		711.8	199.0	39.1	1.5	20.5	70.6
Average annual change		12.2	6.3	1.9	0.1	1.0	3.0

[a] The GNP deflator is a measure of the inflation in the general economy.

[b] Physician fee inflation is measured here by the Physicians' Services Component of the Consumer Price Index minus the GNP deflator.

[c] NA = Not available.

SOURCE: U.S. Department of Health and Human Services, Health Care Financing Administration, Bureau of Data Management and Strategy, Office of Financial and Actuarial Analysis, Division of National Cost Estimates, unpublished data, 1985; and R.M. Gibson, K.R. Levit, H. Lazenby, et al., "National Health Expenditures, 1983," *Health Care Financing Review* 6(2):1-30, Winter 1984.

ity of the average physician service—possibly due to technological change—or an increase in the fee for the average service that is not accounted for in the physicians' services price index (that estimates changes in prices with respect to a fixed market basket of services).

In fact, over the period from 1968 to 1983, the increases in per capita expenditures for physician services for the Medicare program have risen at about the same rate as per capita increases in the country as a whole (see figure 2-3). Over that time period, the United States as a whole has averaged increases of 11.6 percent. The comparable statistic for the Medicare program is 11.5 percent. Through 1977, the Medicare increase was less than that of the United States as a whole in 8 out of 10 years. Only since 1978 has the Medicare increase consistently exceeded the aggregate increase.

Physician Incomes

Payments for physicians' services can also be considered as income to physicians. Those incomes have also been increasing. For example, average gross professional revenues more than doubled from $81,800 in 1973 to $192,200 in 1983 (391). Physicians' average net income also rose over that decade, but in constant dollar terms, it was nearly constant. Average real net physician income in 1984 was 4 percent lower than in 1970 (see table 2-6). However, this pattern of stable or declining real income was common to many occupations during the period of the 1970s with its high inflation rates. During the same period, earnings in constant dollars of workers in private nonagricultural industries fell 9 percent (500).

Income data indicate that there have been substantial differences among physicians by specialty in both the level of income and the growth of income level. Hospital-based specialists in anesthesiology and radiology have had both the highest and the most rapidly increasing net incomes. General practitioners have had the lowest net incomes, on average. Net incomes for general practitioners actually declined between 1981 and 1983 by 2.6 percent a year (see table 2-7).

Table 2-6.—Trends in the Gross Income, Expenses, Net Income, and Real Net Income of Physicians, 1970-84

Year	Average gross income	Average expenses	Average net income	Median net income	Real net income[a]
1970	$ 66,100	$24,300	$ 41,800	NA[b]	$41,800
1971	74,200	28,900	45,300	NA	43,400
1972	78,500	31,300	47,200	NA	43,900
1973	80,800	32,200	48,600	NA	42,700
1974	86,000	34,000	52,000	NA	41,200
1975	94,900	38,500	56,400	$54,000	40,800
1977	106,700	45,500	61,200	56,300	39,200
1978	111,900	48,400	65,500	60,000	39,000
1979	131,300	52,900	78,400	73,200	41,600
1981	167,000	74,000	93,000	78,000	39,400
1982	177,900	78,400	99,500	85,000	40,100
1983	192,200	85,900	106,300	90,000	41,600
1984	201,000	92,600	108,400	92,000	40,200

[a] Average net income in 1970 dollars.
[b] NA = Not available.

SOURCE: American Medical Association, *Profile of Medical Practice 1981* (Chicago, IL: AMA, 1982); G.L. Glandon and J.L. Werner, "Physicians' Practice Experience During the Decade of the 1970s," *J.A.M.A.* 244(22):2514-2518, Dec. 5, 1980; "Average Net Income and Expenses of Physicians 1981," *SMS Report* 1:5, June 1982; and R.A. Reynolds and R.L. Ohsfeldt (eds.), *Socioeconomic Aspects of Medical Practice 1984* (Chicago, IL: American Medical Association, 1984).

Table 2-7.—Mean Physician Net Income After Expenses Before Taxes, Selected Years, 1973-83 (in $000)[a]

	1973	1974	1975	1977	1978	1979	1981[b]	1982[b]	1983[b]
All physicians	$48.6	$52.0	$56.4	$61.2	$65.5	$78.4	$ 93.0	$ 99.5	$106.3
Specialty:									
General/family practice	41.9	44.7	45.4	51.1	54.6	62.0	72.2	71.9	68.5
Internal medicine	47.8	51.4	57.0	61.5	63.8	76.2	85.1	86.8	93.3
Surgery	57.4	60.5	68.2	74.0	82.6	96.0	118.6	130.5	145.5
Pediatrics	41.1	42.1	44.3	48.2	51.2	60.4	65.1	70.3	70.7
Obstetrics/gynecology	55.4	61.7	63.3	69.9	70.3	91.8	110.8	115.8	119.9
Radiology	59.5	63.8	75.2	76.7	81.5	98.0	116.9	136.8	148.0
Psychiatry	38.4	41.3	44.8	48.2	50.2	62.6	70.6	76.5	80.0
Anesthesiology	48.1	54.4	57.1	65.5	74.2	91.4	118.6	131.4	144.7
Census division:									
New England	44.2	46.3	47.2	53.1	54.9	66.6	85.0	82.2	84.5
Middle Atlantic	43.8	47.7	53.2	55.9	59.1	73.2	85.6	91.1	98.6
East North Central	50.5	54.2	59.9	62.7	69.9	81.2	100.9	106.2	114.3
West North Central	51.5	53.6	56.6	61.1	70.2	79.4	87.4	106.5	110.5
South Atlantic	50.3	54.4	58.2	61.8	64.9	79.8	92.6	97.9	106.7
East South Central	53.3	58.4	65.5	68.2	79.7	87.0	97.5	106.8	114.9
West South Central	52.8	57.7	61.4	67.9	70.9	85.8	101.6	118.7	124.4
Mountain	47.4	49.5	54.7	57.5	61.8	73.5	92.6	95.8	91.4
Pacific	48.1	50.9	54.8	63.6	64.9	78.6	91.7	92.9	103.1
Type of practice:									
Solo	45.3	48.5	51.6	56.3	61.3	75.8	88.4	93.4	100.0
Non-solo	52.8	55.6	61.1	68.3	69.9	80.7	96.6	104.0	111.3
Location:									
Nonmetropolitan	46.9	48.5	50.2	56.7	64.8	74.1	87.1	86.9	87.2
Metropolitan									
Less than 1,000,000	50.3	53.7	58.8	63.2	67.4	78.8	99.6	103.9	111.0
1,000,000 and over	47.5	51.5	55.6	60.6	63.9	78.8	90.2	98.4	106.3
Physician age:									
Less than 36 years	32.8	40.6	43.7	49.6	49.0	64.3	62.5	73.3	77.0
36-45 years	51.9	57.1	62.9	69.9	70.1	87.5	98.1	108.2	110.2
46-55 years	55.0	58.9	62.3	67.7	76.2	87.1	110.8	116.5	133.6
56-65 years	48.3	49.3	54.1	58.7	65.3	75.9	95.6	99.5	103.1
66 or more years	31.9	34.0	35.0	36.8	44.4	54.9	68.3	64.3	71.9

[a] Data, other than in the specialty breakdown, are based on responses from physicians in all specialties.
[b] Caution should be observed in comparing results for 1981-83 with results for previous years because of changes in methodology made in the transition from the periodic surveys of physicians to the socioeconomic monitoring system. Results for 1981 and 1982 in the location breakdown reflect corrections of previously reported results.

SOURCE: R.A. Reynolds and R.L. Ohsfeldt (eds.), *Socioeconomic Aspects of Medical Practice 1984* (Chicago, IL: American Medical Association, 1984).

The variations in income parallel the variation in return on training among specialties. Dresh assessed the net capital value of returns to physician training for various specialties compared to general practice using a measure of lifetime physician earnings (113). He found that, except for pediatricians, psychiatrists and allergists/dermatologists, the adjusted lifetime earnings of medical and surgical specialists were much higher than those of general practitioners (113).

There is also a marked difference in annual earnings among specialties. Several studies confirm this finding and indicate that physician earnings for some specialties are higher than those for other specialties even when allowances are made for the opportunity costs of education and capital spent on education and offices (46).

Medicare's contribution to physicians' income also varies by specialty (353) (see table 2-8). A report of a recent survey of physicians indicated that only 8.4 percent of self-employed physicians had no Medicare patients in 1984 (406a). Those physicians who reported providing care to some Medicare beneficiaries indicated that 31.3 percent of their patients had Medicare as the primary source of insurance coverage (see table 2-9). What is not known is whether, and if so, to what extent, specialty differentials contribute to the differences in Medicare payment among specialty groups. Numerous other variables, such as volume of Medicare services provided, relative payments for procedural services vs. nonprocedural services, and the different mix of services provided by different medical disciplines are also contributory factors.

Table 2-8.—Gross Physician Earnings From Medicare, 1981

Specialty	Medicare income	Percent of total gross income
Anesthesiology	$32,790	22
Family practice	21,220	15
General practice	21,170	18
General surgery	43,750	25
Internal medicine	39,630	29
Neurology	37,390	24
Neurosurgery	37,310	18
Obstetrics/gynecology	8,530	5
Ophthalmology	49,010	24
Orthopedic surgery	43,220	17
Pathology	28,000	21
Pediatrics	1,170	1
Plastic surgery	18,780	12
Psychiatry	6,370	6
Radiology	49,730	28
Thoracic surgery	72,420	35
All surgical specialties	38,910	20
All nonsurgical specialties	24,660	17
All MDs	27,490	17

SOURCE: A. Owens, "How Much of Your Money Comes From Third Parties?" *Medical Economics* 60:254-263, Apr. 4, 1983.

Physician Control Over Expenditures for Physician Services

Although physician expenditures represent 22 percent of all health expenditures (165), physicians have considerable influence on the use of a wide variety of nonphysician services. Blumberg estimated the fraction of all health care services under physician control and the relative cost of those services (46). By taking the product of those two factors for each type of service and summing over all services, he estimated physician control for 1976 as 69.8 percent of total costs. With respect to individual services, physician control ranged from 91 percent of the cost of hospital expenditures to 20 percent of the cost of "other professional services." Physician control was assessed by estimating the proportion of services that patients received on the direction of their physicians. In aggregate, physician control over ambulatory care was estimated as 61.5 percent, ranging from 45 percent in pediatrics to 81 percent in psychiatry. Physician control over all physician services in all sites was estimated to be 76 percent.

Another perspective on this question comes from recent work on the potential use of DRGs for physician reimbursement purposes (571). If physician charges represent 20 percent of all health care bills but physicians are responsible for 70 percent of all charges, one would infer that physicians order services of roughly 2.5 times the value of their own services. Based on all the physician approved charge data within 2 months on either side of a hospital stay for Medicare beneficiaries in Florida in 1981, West et al. estimated that physicians as a whole ordered hospital services 1.73 times the value of their own services (571). With respect to only those physician services provided during the hospital stay, the Florida statistic would be 2.2. In South Carolina for the same year, physician charges during a stay and within 2 months

Table 2-9.—Percent of Self-Employed Physicians Reporting Specific Percentile Ranges of Patients With Medicare Coverage, 1984

	Percent of self-employed physicians	
Percent of patients with Medicare coverage	All physicians	Physicians with some Medicare patients
0	8.4%	0
<10%	30.0	23.5%
<20	44.2	39.0
<30	60.8	57.2
<40	75.8	73.5
<50	86.1	84.7
<60	92.0	91.1
<70	95.3	94.8
<80	98.6	98.4

[a] Synthesis of reported percentage of physicians without Medicare patients and estimated number of physicians with specific Medicare percentages. These percentages were not directly combined in the source report.

SOURCE: M.L. Rosenbach, S. Hurdle, and J. Cromwell, *An Analysis of Medicare's Physician Participation Agreement Program* (Chestnut Hill, MA: Health Economics Research Center, Oct. 29, 1985).

of either side of a Medicare hospitalization were accompanied by 2.7 times that amount in hospital services. Hospital charges were 3.3 times the value of Medicare physician allowed charges for strictly inhospital physician services. When the physician charges were further disaggregated to identify the physician practice that alone was responsible for the largest fraction of physician charges, each "lead" practice was responsible for 3.8 times the value of own charges in Florida and 4.8 times the value of own charges in South Carolina.

Whether physicians control 70 percent or more of additional health care services, the potential spillover effect of physician payment reform on those additional health care dollars heightens the importance of any reform.

PHYSICIAN PAYMENT CHANGES AND PRACTICE CHOICES

With any change in the method of physician payment adopted by Medicare, one can expect responses by physicians in practice. The variety of choices available to physicians in response to payment changes includes both entrepreneurial and clinical decisions. Net payment to the physician, however, is only one factor in the physician's decisionmaking process. A patient's health status, presenting complaints, income, health insurance coverage, and health insurer's utilization controls, in addition to the physician's experience, practice style, repertoire of skills, and available equipment may be equally if not more important in influencing both the clinical and business decisions of the physician. These decisions include choices among particular physician services, choices with respect to the volume of services provided to Medicare beneficiaries, and choices with respect to physician participation in the Medicare program on an assigned basis.

Physicians as Entrepreneurs: Accepting Assignment

Two basic entrepreneurial decisions that physicians must make with respect to the Medicare program are: 1) whether to accept Medicare beneficiaries as patients and bill the program for services provided to those patients, and 2) whether to accept assignment.[8] The factors that influence these decisions have been studied, and some significant factors identified, in studies using an economic model of the physician as entrepreneur based on the assumption that the physician is a discriminating monopolist[9] (184,188,317,357,402).

There is little question about the effects of changes in approved charges on physician participation in the Medicare program. The higher the ratio of approved charges to billed charges, the more likely a physician is to accept assignment for Medicare patients. The higher that ratio, the more services will be provided to Medicare patients per capita and the greater will be the number of individual Medicare patients treated by that physician. The estimated relationships have been consistent and positive. The estimates of physician responsiveness to Medicare's relative allowances have clustered around the value of 0.7 (293), implying that for a 10-percent increase in the ratio of approved to billed charges, there would be an increase of 7 percent in assignment.

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[8] Since the passage of the Deficit Reduction Act of 1984, all physicians who provide services to Medicare beneficiaries have been asked to make an annual election either: 1) to become a Medicare participating physician and accept assignment for all Medicare claims, or 2) to retain the option of accepting or rejecting assignment on a case-by-case basis.

[9] Strictly defined, a monopolist is the only seller of a particular good or service in a particular market. A seller who can influence (raise) the final market price due to control over a substantial portion of the total volume of a particular commodity or service has a substantial degree of monopoly power. A monopolist who can maintain different prices for different consumers is a discriminating monopolist.

With respect to the influence of approved charges on the decision to become a Medicare participating physician, one would expect participating physicians to be comparable to physicians who exhibited high assignment rates prior to the participating physician program (317). Early evidence suggests that those physicians who did elect to "participate" had relatively high assignment rates prior to the initiation of that program (15). An initial study of participating physicians showed, in fact, that previous assignment rates and the percentage of the usual fee reimbursed by Medicare were the most important economic variables associated with the decision to participate (94).

In all likelihood, modification of CPR or conversion of Medicare physician payments from CPR to some other system would result in increases in approved charges for some physicians for some services and might result in decreases for others. Therefore, one would expect a decrease in the probability of assignment being accepted in those instances where approved charges were reduced and an increase where approved charges were raised. (Similarly, one would expect an increase in the probability that a physician would become a "participating physician" if his or her allowed charges had been increased.) The individual effects on specific physicians would depend on their approved charges in aggregate under CPR relative to those of their peers.

The financial effects of changes in physicians' allowed charges on individual beneficiaries would depend on the constellation of physicians providing services and the individual services provided in treatment. Given both increases and decreases in approved charges, one would expect both decreases and increases, respectively, in nonassigned liabilities and increases and decreases, respectively, in beneficiary cost-sharing liabilities. For example, a beneficiary whose physician experiences an increase in approved charges would be more likely than otherwise to have that physician accept assignment, thereby reducing the expected nonassigned liability. At the same time, however, that beneficiary would face an increase in coinsurance liability equal to 20 percent of the increase in the allowed charge. The net financial effect on any one beneficiary would depend on his or her physicians' combined assignment/participation behaviors and changes in allowed charges.

Changes in the quality of care received by beneficiaries can also be expected to accompany the financial changes occasioned by physician decisions on assignment. In response to any net increases in out-of-pocket liabilities, Medicare beneficiaries may choose to forgo the use of some physician services. For some beneficiaries, such a change might actually result in an increase in quality through the reduction in the probability of receipt of some physician services that are inappropriate to the patient's condition. On the other hand, the provision of otherwise appropriate services might also be reduced, and the probability of receipt of appropriate services that are not currently being provided might also decline. For poor patients, a reduction in care would be likely to have an adverse effect on their health (194).

Quality of care might also be affected if patient choice among physicians were to be restricted because of physician decisions about assignment. If it were the case that those physicians who provided relatively high quality experienced the greatest reductions in allowed charges, the beneficiaries' out-of-pocket costs for securing access to those physicians would be expected to exhibit greater than average increases. If those physicians' patients switched to other sources of care, quality might decline. However, there is no evidence associating physician quality and the level of allowed charges. Further, there is some evidence that patients will not switch providers in response to changes in out-of-pocket costs (288).

A Medicare physician payment reform that is designed to reduce Medicare program expenditures probably will result in increased beneficiary liabilities as long as the case-by-case assignment choice remains an option for physicians and as long as there exists a private market for physicians' services. A net decrease in average allowed charges can be expected to lead to reductions in assignment by nonparticipating physicians and reductions in the numbers of physicians who elect to become participating physicians.

The participating physician concept has modified physicians' options with respect to assignment. One can infer, however, that the participating physician decision is analogous to the case-by-case assignment decision (15), an inference that appears to be confirmed in a study using American Medical Association survey data (94). Data from the Medicare carriers indicate that assignment rates for all claims have increased under the participating physician program (537). A study based on physician survey data from five specialties suggested that net assignment rates for physician visits would decline with respect to a possible "all or none"[10] assignment system (317).

The Effect of Relative Prices on Technology Choices

If one assumes that a physician has made the decision to accept Medicare patients on either an assigned or unassigned basis, in effect, an array of relative expected payments available for specific services is established in advance. That is, the physician can know that he or she may expect to receive $16 from Medicare and $4 from the patient for an assigned office visit, for example, or $48 from Medicare and $52 from the patient for an unassigned sigmoidoscopy. At that point, one might begin to ask about the impact of such price differences.

In theory, in addition to factors specific to the patient, the patient's health insurance, the patient's physician, and the physician's practice, relative prices *can* influence physicians' clinical decisions. Specifically, one can identify two types of clinical choices where relative prices may make a difference: 1) choices between two services that are substitutes for one another, and 2) choices among services that may be complements.

The choice between substitutes is usually illustrated by the classic distinction between medical and surgical treatments for a particular disease. In fact, there may actually be more than two treatments that can be substitutes as in the case of (surgical) open nephrolithotomy, (catheter-based) percutaneous nephrolithotomy, and extracorporeal shock wave lithotripsy (ESWL) for the treatment of kidney stones. An alternative type of substitution may occur if the physician has the option of delegating the performance of a particular diagnostic test, for example, to an assistant. Similarly, the physician may substitute time spent in performing specialized diagnostic tests, such as endoscopies, for his or her own direct patient contact time. The distinction between substitutes and complements may become blurred at this point, and discerning actual choices from billing records becomes especially difficult. Although it may involve a complementary service, when physicians choose to perform endoscopies or other diagnostic tests by themselves, they are substituting time with one patient for time that might have been spent with another patient.

When *would* relative price make a difference? Where there are clear medical indications of the advantage of one technology over another or clear contraindications against one choice, price may not matter much to the physician. Differences in net revenues to the physician would be more likely to influence medical decisions for which the medically and ethically correct decision is unclear (194). The relevant comparison with respect to net revenues involves not only the net revenues anticipated from the particular services that may be substitutes for the patient in question, but the opportunity costs of providing services to another patient. For example, although a physician might receive a greater net revenue from Medicare for providing a limited[11] office visit rather than a brief office visit to a Medicare beneficiary, that physician might choose to provide the brief visit if still greater net revenues were available for providing services to patients with insurance that provide higher payments than Medicare.

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[10] Under an "all or none" system, a physician would have to choose between accepting assignment on all Medicare claims versus not being able to accept assignment on any Medicare claims. The current system might be described as "all or some."

[11] The manual of Current Procedural Terminology, 4th ed. (CPT-4) defines a *limited* service as follows: "a limited level of service is one pertaining to the evaluation of a circumscribed acute illness or to the periodic re-evaluation of a problem including an interval history and examination, the review of effectiveness of past medical management, the ordering and evaluation of appropriate diagnostic tests, the adjustment of therapeutic management as indicated, and the discussion of findings and/or medical management" (85). *Brief* involves "a level of service pertaining to the evaluation and treatment of a condition requiring only an abbreviated history and examination."

The effects of relative prices on treatment choices, however, have not been studied empirically. This situation is partly a result of data limitations, but it also derives from the difficulty in empirically framing the question for analysis. Finding specific examples where a sufficient number of individual physicians face a particular choice among substitute services involving comparable patients but with differing relative payment levels is not easy.

Several authors have speculated on the potential effects of relative revenue differences involving services that may be viewed as complements to office visits (4,424). Schroeder and Showstack note that the per physician net incomes of a group practice that performed eight specific diagnostic tests in the practice would be nearly three times greater than that of a physician in a solo practice in which virtually no diagnostic testing was performed by the physician in the office even though each physician in the group practice might see fewer patients than the solo physician (424). In the case of a Medicare beneficiary whose coinsurance and deductible were covered by a private supplemental insurance policy, the additional cost to the patient of an endoscopic exam might be negligible, but the increase in revenue to the physician who complements the patient's treatment with that exam may be several hundred dollars. Because the information provided by the test may be useful and the time required to perform the test is relatively short (423), the incentive to perform the test may be nearly irresistible.

Is There Too Much Service With Fee for Service?

One issue that should be addressed at this point involves the incentives faced by physicians under a fee-for-service payment system. In one sense, fee-for-service incentives are volume increasing because the physician can receive an extra payment for each extra service performed and billed. The gross price per service alone, however, will not establish a positive incentive. Any incentive will depend on the available revenue per service net of cost. If, for example, a physician can spend the same amount of time to administer an injection of pneumococcal vaccine or prescribe a drug, and if the additional cost to the physician for the vaccine is $5 with no appreciable additional cost for a prescription pad, a positive incentive exists to prescribe rather than to inject even if the payment for the injection is $10 and that of the visit with a prescription is $6.

One might argue, however, that physicians behave as if virtually all their costs were fixed;[12] hence gross payment levels do indicate incentives. Physician obligations for employee salaries, space and equipment, insurance, and transportation may be considered by physicians to be fixed annually, and those obligations may represent 70 to 90 percent of all office expenses (355,391). Further, since total physician office costs are approximately 40 percent of gross professional revenues, most services may appear to yield profits and hence embody an incentive to provide more. This argument assumes, however, that physician time is of no value in and of itself. When the alternative revenues that a physician might generate with his or her time, the opportunity costs, are included in the calculation of costs, incentives for greater amounts of service exist only when net payments exceed those opportunity costs. From this perspective, any incentives would be a function of the level of payment in addition to the method through which that payment level is derived.

In one sense, Medicare payments may be too high for some services. They may be too high in general. For example, nearly one claim in five is paid at or below the level of the physicians' customary charges (535). Because a physician will be paid the lower of the billed charge or the customary (or prevailing) charge, one would expect billed charges to exceed customary charges if approved charges were consistently too low. Lower approved charges within the context of a fee-for-service, therefore, might retain beneficiary access to physician services in addition to reducing some inappropriate incentives to provide too much service.

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[12] Fixed costs are those costs that do not vary as output varies. Most overhead costs can be considered fixed costs. Although a policy for professional liability insurance may subsequently be canceled, a physician's expenditures for such insurance are *fixed* at rates established annually. Some office overhead expenditures, e.g., heat or electricity, however, are not fixed, since they will cease to be incurred if the physician does not have his or her office in operation.

Volume Responses and Induced Demand

The additional possibilities of providing physician services that in some sense are complements to treatment lead to the issue of changes in the aggregate volume of physician services in response to changes in allowed charges. In a market economy, most suppliers would respond to a decrease in prices paid for their goods and services by reducing the quantity they were willing to sell. One might believe, therefore, that reductions in approved charges for physicians services would lead to reductions in Medicare expenditures for those services, even if there were no reduction in the volume of services provided. In fact, one might believe that a reduction in approved charges by Medicare would lead to a reduction in the number of services provided by physicians to beneficiaries, reducing expenditures by an even greater amount. However, in response to changes in approved charges, beneficiaries and physicians may appear to change their behaviors in ways that increase service volumes. For example, in response to a decrease in approved charges some patients might want to increase their purchases of physician services. If, in addition, physicians can control service volumes, an alternative approach to payment reform based solely on reductions in allowed charges may be needed to control increases in expenditures.

The question of whether physicians in particular can influence the use of their services and hence frustrate cost control efforts based solely on controls on fees is one of a number of issues included under the topic of iatrogenic- or supplier-induced demand. The possibility that physicians might induce demand for their services has been the subject of empirical studies since as early as the late 1960s (389). In particular, studies of cases where public health insurance programs have reduced or frozen physician fees have suggested that such efforts have not controlled costs (158).

Unfortunately, none of the studies unequivocally proves or disproves the magnitude or even the existence of induced demand. For example, a study of California physicians' billings to Medicare during the period of the Economic Stabilization Program, found that in spite of the fee freeze overall costs rose substantially because there was an increase in the volume of services provided to Medicare beneficiaries (215). This result is often cited as evidence that even if price controls do control price, they do not control expenditures. However, an alternative explanation for the increase in Medicare volume during the Economic Stabilization Program can be found in the well-established positive relation between Medicare participation and allowed charges. The Economic Stabilization Program was instituted in August 1971, 1 month after Medicare approved charges had been increased for fee screen year 1972 and 5 months prior to the (January) period typically exhibiting the largest increases in physicians charges. As a result, Medicare approved charges relative to private market payments were frozen at a level typically higher than that of any other time of the year. Given that physician participation in the Medicare program has been found to be positively related to the ratio of approved charges to billed charges, one would have expected physicians to increase the volume of services provided to Medicare patients.

If not resolved, the current debate on this issue only simmers. There appears to be some physician volume response to reductions in physician prices. Quebec's experience indicates that fee controls can be effective in reducing the rate of growth in physician expenditures, in spite of some volume increases (28). If the volume response is perceived as potentially vitiating the desired effect of physician payment reform, an initial step might be to monitor volume changes to ascertain the need, if any, for additional controls.

Cost-Shifting

One other potential physician response to reductions in Medicare approved charges is that physicians might raise their non-Medicare charges, a form of "cost-shifting." However, if non-Medicare patients are responsive to price, i.e., if their willingness to purchase physician services is reduced when prices increase, rational physicians would reduce their charges to non-Medicare patients rather than increase them in response to reductions in approved charges (188,357). It may well be the case that physicians may choose not to participate in the Medicare program if payments are reduced to levels significantly below those of the non-Medicare market, but there is no theoretical or empirical evidence for physicians' cost shifting.

It is possible that some physicians might appear to provide greater quantities of service to their non-Medicare patients as an additional response to reductions in Medicare approved charges. This might also be perceived as "cost-shifting." However, other things being equal, if non-Medicare patients are responsive to price, there should be no net increase in physician service volumes to those patients unless there is a decrease in average fees charged to those patients. Alternatively, if some physicians elect to serve fewer Medicare patients in response to a decrease in Medicare approved charges, there might be a reduction in appointment delays or office waiting times. This decrease in the "time price" might then be followed by an increase in demand for services by those physicians' non-Medicare patients.

ISSUES WITH RESPECT TO MEDICARE'S PHYSICIAN PAYMENT SYSTEM

Then HCFA Administrator Leonard Schaefer enunciated the basic missions of HCFA in 1979 (508):

- to promote the timely, cost-effective delivery of appropriate, quality health care services to its beneficiaries;
- to make beneficiaries aware of the services for which they are eligible, and to make those services accessible to them in the most effective manner; and
- to ensure that its policies and actions promote efficiency and quality within the total health delivery system which serves all Americans.

This mission statement can provide the basic starting point in examining whether Medicare's physician payment systems foster or hinder the achievement of those objectives. As might be expected, however, it is easier to raise the issues than to resolve them. As reviewed above, Medicare expenditures for physician services have continued to increase, but until 1982, Medicare increases were roughly in concert with those observed in all U.S. expenditures for physician services. There are perceived excessive variations in such aspects of Medicare physician services as payment levels, assignment rates (and hence effective financial coverage), and utilization of services. Such variations are consistent with problems in quality, access, cost and/or efficiency, but one would also *expect* to observe even some substantial variations in a national program serving more than 30 million beneficiaries in thousands of local markets. Although many observers conclude that the variations are too great not to reflect a particular problem of interest, there is little or no consensus about whether the variations signify actual problems.

Although the many perceived variations in the Part B program may not unequivocally indicate the presence of problems, there seems to be no question that such variations have led to confusion on the part of both the beneficiaries and the providers. In addition, health insurance coverage, which insulates patients and providers from health care costs, and the design of the Medicare benefit package itself do not provide incentives for efficiency. Confusion and inefficiency are the first issues reviewed below. Following that discussion, the magnitudes of the potential problem variations are addressed. Potential problems include:

- variations in annual expenditures per beneficiary;
- variations related to assignment; and
- payment level variations with respect to geographic areas, physician specialties, and place, type, and vintage of service.

Some variations that might be expected, such as those due to quantity discounts, for Medicare as a large payer, are not evident, and some variations are either exacerbated or moderated by the MEI. These potential problem areas are reviewed in light of what is known about plausible levels of variations in payments and expenditures that might be expected in the Medicare program.

Beneficiary and Provider Confusion

The CPR method of determining approved charges, the possibility of case-by-case assignment choice by physicians, and even the existence of the Part B deductible itself all contribute to confusion about payments among both beneficiaries and providers. An Administrator of HCFA once noted, "We get something like 9 million letters a year on reimbursement, most simply wanting to know how the payment was arrived at" (98). Even with the Medicare participating physician program initiated under the Deficit Reduction Act of 1984 (Public Law 98-369), it is rarely straightforward for a Medicare beneficiary to establish in advance his or her out-of-pocket liability for covered Part B services.

Because CPR in effect establishes a separate fee schedule for each physician practice, the approved charge for a specific procedure may vary widely within a given locality. Hence, there will be variations in beneficiary coinsurance liability for a specific service regardless of assignment. Further, some physicians may not be able to recall their Medicare approved charges when they recommend to the patient that a specific service be rendered, and when they refer a patient to another physician for a specialized service, they may not know all of the services that that physician may render, much less the charges for those services. In that case those physicians may not be able to tell patients what their expected out-of-pocket cost will be. Finally, for some infrequently performed procedures rendered near the beginning of a fee screen year, an approved charge for the procedure may not have been calculated for the physician practice. Neither the beneficiary nor the physician would then know the level of the approved charge until after a bill for the service had been submitted.

Under Medicare's participating physician program, a significant proportion of practices have agreed to accept assignment on all claims. There are also directories available at the offices of the carriers that identify those practices. Unfortunately, because some physicians may have more than one practice and may not have elected to "participate" in each practice, the directories are not a perfect guide to 100-percent assigned practices (231).

With respect to the providers, there are many situations in which a physician will not know how much he or she will be paid for treating a Medicare beneficiary. Prior to the implementation of the freeze, at the beginning of a fee screen year a physician would be likely to learn of that year's allowed charges only as reimbursements were received for services rendered in the new fee screen year. A physician could request information on those new approved charges from the carrier, but there was no organized information dissemination of approved charges to physicians from the carriers. However, even where the approved charges are known, those charges are not reimbursed by the carriers for patients who have not yet satisfied the Medicare deductible. Further, the deductible is assessed as of date of payment, not date of service. If a Medicare beneficiary received $75 of physician services on a nonassigned basis in January but did not file those claims until after receiving $75 of assigned physician services in March, the assigned services would be applied to the deductible and hence would not result in a payment from the carrier. Even though the patient may have indicated that he or she had already met the deductible, the physician who accepted assignment in this example would have to collect those charges from the beneficiary.

Finally, provisions regarding elderly beneficiaries who are employed may also lead to uncertainty for providers. Medicare is not the primary payer for aged beneficiaries below age 70 who are covered by employer-offered health insurance plans. As a result, a physician who treats such a Medicare patient may find that the charge approved by the patient's insurer is not the same as the Medicare allowed charge. In addition, if the physician had accepted assignment and submitted a bill to the Medicare carrier, Medicare might deny payment of the bill unless it had been first presented to the third-party carrier of the patient's employer.

Inefficiencies in the Delivery of Medical Care

In addition to improving people's ability to obtain medical care, health insurance affects people's decisions about using services and providers' decisions about purchasing and using technologies (343). Compared to those who pay for care out of pocket, cost is less of a deterrent to insured persons' decisions to seek care and to choose costly providers and technologies. Similarly, consideration of insured patients' finances is less of a concern to physicians and other providers who buy and use medical technologies. Thus, one would expect to observe Medicare beneficiaries demanding greater volumes of covered physician services at any price level than would be strictly cost effective. Further, this is more likely to be the case for those beneficiaries who: 1) receive services under capitation without copayment, or 2) have obtained supplemental insurance that pays for the Medicare deductible and coinsurance. Under fee-for-service payment, in those cases where net revenues are increased by the increased provision of care, providers' financial incentives reinforce the beneficiaries' enhanced demand for services. Under capitation, net revenues are diminished by the increased provision of care; hence, the incentives regarding use for beneficiaries conflict with the incentives for those who receive the capitation payments.

The Medicare benefit package may also contribute to inefficiency in the provision of physician services. Although providers render much preventive care to Medicare beneficiaries in the course of visits, many preventive services, such as physical examinations and influenza vaccinations, and some rehabilitative services, such as hearing aids, are not officially included under Medicare coverage. Exceptions are pneumococcal vaccination, which is covered for all beneficiaries, and hepatitis B vaccine, which is covered for end-stage renal disease patients and other categories of beneficiaries at high or intermediate risk of contracting hepatitis B (89). Beneficiaries are liable for the total charges of services not covered by Medicare, and might be expected to use less of such services than might be recommended on strictly medical or cost-effective grounds. On the other hand, legislation (the Omnibus Reconciliation Act of 1980, Public Law 96-499) has eliminated beneficiary cost-sharing in certain cases to encourage the use of less costly alternatives. For example, beneficiaries are liable for no deductibles or coinsurance for certain surgery performed in ambulatory surgical centers.

The result from these design decisions would be expected to be inefficiency (higher cost for a given level of quality) in the provision of particular technologies and in the combination of technologies used for a given medical condition. For example, duplicative laboratory tests may be performed, diagnostic and therapeutic equipment and facilities may be used far below capacity, and the more expensive and hazardous hospital setting may be used when ambulatory care would be just as effective (483).

Variations in Annual Expenditures per Beneficiary

There is more than a twofold variation in reimbursements per Medicare enrollee across the 50 States. In 1982, for example, Medicare reimbursements for physician and other Part B medical services on behalf of aged beneficiaries in the United States averaged $517.93 per enrollee. In Nevada, however, the average was $842.29, while in West Virginia, the average was $305.15 per enrollee. The western census region as a whole averaged $654.40, nearly 40 percent greater than the southern census region at $468 (525).

Although not necessarily indicative of problems, there are also variations by age, gender, and race. As might be expected, Medicare reimbursements per enrollee increase as the age of the enrollee cohort increases. In 1978, average reimbursements per enrollee for physician services for aged Medicare eligibles averaged $197. For the age 65 to 69 cohort, the average was $152; for those aged 85 and over, the average was $259. During that same year, reimbursements on behalf of male beneficiaries were $214 compared to $186 for females. This disparity widened over the 1975 to 1978 period. Average reimbursements for white beneficiaries were $201 in 1978, compared to an average of $153 for nonwhite beneficiaries. (There was no obvious trend in this relation over the 1975 to 1978 time period (297).)

Part of the regional variation in Medicare expenditures per beneficiary is due to the variation in the proportion of beneficiaries who exceed the Medicare deductible—and who are thus eligible for reimbursements.[13] In 1982, 65.6 percent of both the aged and the disabled populations exceeded the deductible. In Rhode Island, however, 78 percent of the aged beneficiaries exceeded the deductible, while only 54.7 percent of Kentucky's aged beneficiaries exceeded the deductible. (There are no marked disparities in any State between aged and disabled Medicare populations in terms of the percentages exceeding the deductible.)

One other factor that contributes to the variation in expenditures per beneficiary involves differences in the apparent relative stringency of the reasonable charge process. In the first quarter of 1985, 17.4 percent of physician claims were submitted with charges *at or below* the effective approved charge limits. Of the remaining 82.6 percent of claims, the average reduction per claim was $32.84. As a result, Medicare's approved charges in aggregate were 74.5 percent of the total submitted charges. The differences in these statistics among carriers are striking. For example, Maryland Blue Shield reduced only 48.7 percent of claims, while 91.6 percent of Hawaii's claims were subject to reductions by its carrier, Aetna. The average reduction per claim for that time period was $19.98 in Vermont, but $44.49 in Nevada. Finally, allowed charges were 80.8 percent of total covered charges in Kentucky, but only 66.2 percent of total covered charges in Rhode Island (535). Thus, a Kentucky beneficiary with a nonassigned claim for $100 might expect to have to pay $33.36 out-of-pocket charges, while a Rhode Island beneficiary with a comparable claim might have to pay $47.04, 41 percent more.

Variations Related to Assignment

There is substantial variation in assignment rates across the United States. Assignment rates nationally declined from 1969 through 1977, but they have increased since that time reaching 59 percent of claims and 59.6 percent of charges in 1984.[14] In 1982, when assignment was accepted on 51.8 percent of charges for the aged, assignment rates for elderly people increased as the age of the cohort increased, ranging from 47.3 percent for the age 65 to 69 cohort to 61.1 percent for those aged 85 or above. Assignment rates among female beneficiaries exceeded those of males, 52.6 percent compared to 50.6, and nonwhite beneficiaries exhibited higher assignment rates than whites, 79.9 percent compared to 49.3. Assignment rates for disabled beneficiaries exceeded those for aged beneficiaries. Within the disabled population, rates for females were greater than for males, and rates for nonwhites were greater than those of whites. Assignment rates for the youngest cohorts of disabled beneficiaries were the greatest at 88.7 percent for those younger than age 25 compared to 66.6 percent for those aged 45 to 64. Across the States in 1982, the rates for the aged ranged from 87 percent in Rhode Island to a low of 17 percent in South Dakota. Assignment rates for most major physician specialties ranged from 40 for otolaryngologists to 54.7 percent for cardiologists with most specialties at less than 50 percent (296).

In fiscal year 1985, the first year of the participating physician program, 29.8 percent of the physician practices that provided services to Medicare beneficiaries elected to participate. Across the States, the percentage of participating physician practices ranged from a high of 53.9 percent in Alabama to a low of 5.6 percent of the practices in South Dakota. With respect to physician specialties with substantial Medicare volumes, 21.1 percent of anesthesiology practices elected to participate compared to 50.8 percent of the nephrologists. Of 17 distinct physician specialties reported by HCFA, 11 exhibited participation rates between 25 and 35 percent (518). (Early tabulations from the second year of the program indicate that 15.3 percent of the participating practices of physicians, osteopaths, and limited license practitioners from fiscal year 1985 did not continue their participation into fiscal year 1986, although 13,718 new agreements were submitted. As a result, the aggregate participation rate for physicians, osteopaths, and limited license practitioners dropped from 30.4 to 28.4 percent (521).)

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[13] This in turn is due to variations in patient health and in both the level of allowed charges and service volume. Patients who do not initiate visits to physicians or patients with either very inexpensive doctors and/or medically very conservative doctors may not exceed the deductible.

[14] Unless otherwise noted, these and subsequent statistics on assignment include the mandatorily assigned claims of beneficiaries who are entitled to both Medicare and Medicaid coverage.

Because of the assignment option, differences in the proportion of total charges that are approved yield differences in beneficiaries' out-of-pocket liabilities for covered services. In the first quarter of 1985, 81.6 percent of *assigned* claims were subject to reductions averaging $32.48 per claim, as a result of which 73.5 percent of total covered charges were allowed. Of *nonassigned* claims, 84.7 percent were subject to reductions, which averaged $32.84 per claim, yielding approved charges equal on average to 74.5 percent of total covered charges (535). Therefore, for claims that were subject to CPR reductions, expected beneficiary out-of-pocket cost was $18.02 for the average assigned claim. Adding an average coinsurance of $19.19 to the nonassigned liability of $32.84, the expected beneficiary out-of-pocket on an unassigned claim was $52.03 (see table 2-10).

Historically the differences in the statistics between assigned and nonassigned claims have been small. Although a slightly higher percentage of nonassigned claims have been subject to reductions, the reductions on assigned claims have been somewhat greater both in absolute and percentage terms. Within the class of nonassigned claims, however, differences in the effective stringency of the reasonable charge process across carriers directly lead to differences in beneficiary liability. In dollar terms, the average reduction on nonassigned claims is exactly equal to beneficiary average nonassigned liability per nonassigned claim. Although the average for the country was $32.84 per claim in the first quarter of 1985, in Maine, the average nonassigned liability per claim was $17.37, while in the Minneapolis, Minnesota, region served by Travelers, this liability was $56.38 per claim (535).

One might expect that beneficiaries would appear to react to these variations in nonassigned liability with more searching for doctors who accept assignment in those areas where average nonassigned claims were relatively expensive in terms of beneficiary out-of-pocket costs. This does not appear to be the case, however. There is little obvious positive correlation between assignment rates and average nonassigned liability per claim. In fact, in the carrier data reported to HCFA one can observe a slight negative correlation.[15]

Some evidence consistent with searching for assignment can be seen in the variations in assign-

Table 2-10.—Medicare Reasonable Charge Reductions per Claim, January-March, 1985

	Type of claim			
	Assigned		Unassigned	
Average billed charge		$122.35		$128.93
Percent of claims reduced		81.6%		84.7%
Percentage reduction		26.5%		25.5%
Average CPR reduction	(26.5% × $122.35)	$ 32.48	(25.5% × $128.93)	$ 32.84
Average approved charge	($122.35 − 32.48)	$ 89.87	($128.93 − $32.84)	$ 96.09
Medicare payment	(80% × $89.97)	$ 71.90	(80% × $96.09)	$ 76.87
Beneficiary coinsurance	(20% × $89.97)	$ 17.97	(20% × $96.09)	$ 19.22
Nonassigned liability		$ 0.00		$ 32.84
Total beneficiary cost		$ 17.97	($19.22 + $32.84)	$ 52.06

SOURCE: U.S. Department of Health and Human Services, Health Care Financing Administration, Bureau of Quality Control, *Carrier Reasonable Charge and Denial Activity Report January-March 1985* (Washington, DC: U.S. Government Printing Office, 1985).

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[15] In the first quarter of 1982, the correlation between average nonassigned liability per claim and the assignment rate by carrier was −0.26. Possibly due to the increase in assignment rates concomitant with the participating physician program, the negative correlation between average nonassigned liability per claim and the assignment rate by carrier has been reduced. In the first quarter of 1985, this correlation was −0.12.

ment rates by annual charges per user. In 1978, assignment was accepted on 44.6 percent of total physician charges. For those aged patients with charges less than $100, the assignment rate was 30.3 percent. For those with charges between $100 and $149, the rate was 27.9 percent. For those with annual charges in excess of $149, however, as annual charges increased, assignment rates increased. The maximum average assignment rates were 52 percent for those beneficiaries with annual charges in excess of $2,500. This general pattern is consistent by specialty and holds for both the aged and disabled populations (297). These data are also consistent with the "big bill" hypothesis that physicians accept assignment more readily for services with high charges, accepting the Medicare approved charge with certainty rather than risk the possibility of incurring a relatively large bad debt. In 1981, with respect to those "big bills" with submitted charges in excess of $200, assigned charges were 52.9 percent of total submitted charges. For bills of $200 or less, assigned charges were 47.6 percent of the total (69).

The assignment option probably exists in Medicare because Blue Shield Plans in the mid-1960s had participating physician options under which, for some patients, a physician would agree to accept as payment in full a fee that was below his or her usual charge for a particular service. A beneficiary who receives an assigned service from a particular physician has therefore received a discount from that physician's otherwise standard fee. From this perspective there is no correct or best level of assignment. A beneficiary who received all physician services on assignment is not necessarily better off than another beneficiary who received the same services from another physician with no services provided on assignment. The out-of-pocket costs of the first beneficiary could be higher than those of the second. Other things being equal, assignment can mean reduced out-of-pocket liabilities and hence reduced financial barriers to care. Assignment rates may thus be interpreted as imperfect indicators of beneficiary access to care, with higher assignment rates presumed to reflect better access. There is no evidence, however, that there are particular groups of Medicare beneficiaries who could not obtain access to needed physician services included in the Medicare benefit package.

Perceived Payment Imbalances

In addition to aggregate and per capita variations in expenditures and out-of-pocket liabilities, there are also significant variations in approved charges for specific services, i.e., individual fees. There are variations across States, across geographic areas within States, and across the physician specialties regardless of State. Variations have also been observed by site of service, by the type of service, by the vintage of the service, and by the apparent relative effective stringency of the MEI.

By design, the legislation establishing the Medicare program did not mandate a national fee schedule for physician services, and the CPR system was at least partly adopted to allow recognition of local differences in charge levels. The observed ranges in approved charges, however, suggest to some that there is excessive variation in charges. Further, the variation in charges is not random. As a result, the incentive effects of Medicare's physician reimbursements may not be in concert with other public policy objectives.

Geographic Variations

For Medicare Part B payment purposes, the country is currently divided into 240 localities. In 18 States, the entire State is a locality; in the remaining States, there are two or more localities. Texas has the greatest number of localities with 32, California has 28, and Illinois has 16 (515). Although multiple localities may be identified and used to partition physician claims for the purposes of establishing prevailing charges and determining approved charges, it should be noted that not every procedure will have a prevailing charge established on a locality-specific basis. Relatively low-volume procedures may have a state- or carrier-wide prevailing charge even in some States with more than one locality.

Medicare carriers were given the responsibility to identify localities in the original Medicare legislation. The Social Security Act, however, was permissive in that it did not require that a carrier identify two or more localities. The original guidelines indicated that localities were to embody substantial, relatively homogeneous, but not necessarily contiguous geographic areas. Homogeneous but relatively small jurisdictions, such as particular neighborhoods, were not to be identified as distinct localities for payment purposes. Subsequent instructions to the carriers required HCFA permission to change the number of localities within any carrier jurisdiction. In recent years, many carriers have consolidated two or more localities.

Interarea Variations.—The range across localities in charges for specific services is substantial. Data from HCFA for fee screen year 1980 reveal that the highest prevailing charge for a brief followup hospital visit exceeded the lowest by 373 percent. For extraction of lens the "excess" was 159 percent. For electrosection of the prostate, hysterectomy, and single view chest X-rays, respectively, comparable differences were estimated as 197, 143, and 536 percent (see table 2-11).

Four-, five-, and six-fold differences in prevailing charges in 1980 were not aberrations. Data from fee screen years 1976 through 1980 show those differences as relatively constant over time. A study of Medicare prevailing charge data from 1975 for a selection of surgeries also showed the same range of results (50). In addition, that review examined whether those variations could be explained by differences in cost of living, malpractice premiums, quality of care, or relative physician shortages. The findings of the study were that cost-of-living adjusted fees still showed three-fold variation; that neither quality differences nor malpractice expense differences could explain the variation; and that relative physician shortage areas exhibited lower rather than higher fees as might have been anticipated.

Intrastate Variations.—Within those States where carriers had established more than one locality, variations in prevailing charges between the highest charge and lowest charge localities have been commonly observed to exceed 50 percent (494). In general this reflects urban/rural payment level disparities. A 1976 study showed that Medicare payment levels in urban areas exceeded those in rural areas by 23 percent (421). After adjustment for cost-of-living differences, Medicare prevailing charges in the largest standard metropolitan statistical areas in 1975 averaged 17 percent above the national average, while those in the counties with the lowest populations averaged 8 percent below (494). If payment level differences exceed differences in physicians' costs of practice, these urban/rural disparities under Medicare will tend to discourage physicians from locating in rural areas. To the extent that the Federal Government has a policy of trying to enhance access of residents of rural areas to physician services, Medicare's physician reimbursement policy in this regard is at variance with national policy.

How Much Geographic Variation Is Enough?—There are arguments on both sides of the question of whether to have identical or varying fees for the same service in different jurisdictions. Two arguments for identical payment levels across jurisdictions, such as might be produced through the use of fee schedules, involve: 1) the potential inappropriateness of different effective benefit

Table 2-11.—High and Low Prevailing Charges in Localities for Five Selected Procedures, Fee Screen Year 1980

	Locality prevailing charges			
Procedure	High	Low	Range	Ratio
1. Brief followup hospital visit by an internist	$ 33.10	$ 7.00	$ 26.10	4.73:1
2. Extraction of lens by an ophthalmologist	1,390.70	536.50	854.20	2.59:1
3. Electrosection of prostate by a urologist	1,410.40	475.25	935.15	2.97:1
4. Hysterectomy by an obstetrician/genecologist	1,305.20	536.50	768.70	2.43:1
5. Chest X-ray single view by a radiologist	35.00	5.50	29.50	6.36:1

SOURCES: U.S. Department of Health and Human Services, Health Care Financing Administration, "Medicare Part B Charges: Overview and Trends, Fee Screen Years, 1976-1980," Washington, DC, Feb. 3, 1982; and U.S. Congress, Senate Committee on Finance and House Committee on Ways and Means, *Background Data on Physician Reimbursement Under Medicare*, S. Prt. 98-153 (Washington, DC: U.S. Government Printing Office, October 1983).

levels for a program supported by national taxes and beneficiary premiums that do not vary by jurisdiction, and 2) the implicit incentives in varying payment levels that make the Medicare program nonneutral with respect to physician location choice. (In particular, it is alleged that Medicare payments encourage new physicians to locate in urban areas while the explicit policy of the Department of Health and Human Services has been to encourage physicians to locate in "underserved," predominantly rural areas.) On the other hand, two arguments for varying payment levels involve: 1) variations in the costs of physician practices across jurisdictions, and 2) variations in what may be market-determined prices for physician services across those areas.

National Equity.—The Medicare Part B program is a national program. It is funded primarily (about 75 percent) through general revenues collected largely on the basis of ability to pay—not State of residence. Beneficiary premiums for enrolling in Part B do not vary across the country, nor is there variation in the deductible that must be met prior to receiving reimbursements for approved charges. Part B enrollees are eligible for benefits regardless of their State of residence or the State in which they may receive physician services.

Medicare payments on behalf of beneficiaries, however, do vary considerably. Variations in payment levels across States and within some States contribute to the variations in benefit payments both directly and indirectly. In particular, compared to beneficiaries who receive physician services in States with relatively high approved charges, those in States with low approved charges have to receive more physician services in order to meet the deductible and hence qualify for reimbursement. In effect, beneficiaries who are in some sense in equally poor health may not have equal financial access to care through the Medicare program. Of course, beneficiaries in lower cost areas are likely to have lower cost-sharing for a given set of physician services.

Location Incentives.—In general, Medicare allowed charges for physician services are highest in urban or suburban areas and lowest in rural parts of the country (471). However, it is exactly in those rural areas that beneficiaries may experience the most difficulty finding a source of medical care because physicians have not elected to establish practices in those locations. Recent evidence has suggested that increasingly fewer rural areas are without a specialist physician (344), but there is still enough of a perceived problem of unequal access to care that Federal policy remains committed to rectifying shortages in "underserved" areas. Therefore, the incentive effects of Medicare physician payment policies are in conflict with other Federal policies with respect to the encouragement of rural practice locations.

The importance of this conflict, however, is far from clear. Based on 1981 revenue estimates, Medicare payments to physicians represent only 17 percent of all their gross professional revenues, ranging from a low of 1 percent for pediatricians to a high of 35 percent for thoracic surgeons (353). In this regard, one might want to design a system that was "location neutral" only to certain specialties, not necessarily including those specializing in tertiary care. However, to the extent that current levels of Medicare approved charges approximate those of the private market in individual localities for any specialty, spectacular increases in Medicare allowances would be required to reduce any aggregate location incentives due to differences in physician prices. Further, the empirical evidence shows that, other things being equal, the link between market-specific physician payment levels and location choice is weak (438). Thus, even if Medicare prices were adjusted to become location neutral, there would be little, if any, effect on local physician shortages.

Differences in Practice Costs.—Although the possibility of varying cost levels provides a plausible argument for varying payment levels, the data on the degree of cost variation are equivocal. Average physician *expenditures* for practice inputs consistently have been the highest in the West South Central census division and lowest in the Middle Atlantic census division (390). In addition, average reported professional expenses have been highest in nonmetropolitan areas, and lowest in the largest of the metropolitan areas (390). Unfortunately, these gross differences in expenditures may mask both differences in practice volumes and differences in physicians' purchasing decisions as a result of their rational entrepreneurial responses to differences in price. For example, other things being equal, physicians who practice in an areas with relatively low commercial rent levels may choose to have larger offices or more patient examining rooms. As a result, those physicians' expenses for office space might be greater than, equal to, or less than those of their counterparts in the higher rent districts. There are no available data on the variations in the costs of operating physician practices of equivalent size, amenity levels, or style.

The available evidence does suggest that current Medicare variations in payment levels exceed plausible differences in the costs of living, if not costs of an "equivalent" practice. As a result, some consideration might be given during implementation of any Medicare physician payment reform to assessing the extent of some of the existing variations to verify whether any remaining variation can be justified.

Physician Opportunity Costs.—Although practice cost differences are important, differences in physicians' opportunity costs need to be considered in establishing a Medicare payment policy that must also foster the goal of assuring beneficiary access to care. Various authors have found that physicians' decisions with respect to Medicare program participation—either generally or specifically on an assigned basis—are influenced by the level of Medicare approved charges relative to the physicians' billed charges (190,317,357). If physicians' private pay patients (and their insurers) are willing to pay relatively high fees regardless of—or even in excess of—differences in practice costs, constraining variations in Medicare allowances to the levels of practice cost differences may result—in high fee areas—in fewer physicians' either accepting Medicare patients or accepting assignment when they do see Medicare patients.

In fact, data from the Medicare carriers suggest that there is less variation in the degree to which approved charges match private pay prices than in the absolute approved charges themselves. Physician submitted charges to Medicare have been found to be a good estimator of private market prices even if most insurers rarely pay 100 percent of submitted charges. As a result, the ratio of allowed charges to submitted charges, by carrier has been accepted as a measure of the degree to which Medicare payment levels match private market levels (215). In the first quarter of 1985, the range in this ratio across carriers went from a low of 66.2 percent in Rhode Island to a high of 81.8 percent in Kentucky. For all but six carriers, the ratio of approved charges to billed charges was between 70 and 80 percent. The national average was 73.8 percent (535). Reducing the interstate variations in Medicare absolute approved charge levels by paying the national average would tend to increase the variation in Medicare's "comparability" to private market physician prices. In particular, it would reduce Medicare's comparability in such States as New York, Pennsylvania, Florida, Michigan, and Texas, all of which are currently below average in terms of the ratio of approved charges to billed. The initial impact of such a policy might well be to reduce beneficiary access to care in States with above-average ratios. One might argue, however, that if Medicare reduced its payment levels in States with relatively high physician prices, the private market would follow, thus bringing Medicare's charges back into line and ameliorating any adverse impact on physician participation in Medicare.

Are Geographic Differentials Necessary?—Having examined the pros and cons with respect to uniform payment levels, what can one conclude? First, a national fee determination process cannot be dismissed as a possibility for improvement. Providing uniform national benefits to Medicare enrollees is not an unreasonable goal. Further, the evidence on the correlation between payment levels and the percentage of beneficiaries meeting the deductible is consistent with effectively *nonuniform* insurance coverage under Medicare Part B. (A Medicare beneficiary in California need not be so sick as one in Oklahoma in order to meet the deductible and hence qualify to receive additional reimbursements.) Eliminating geographic differentials would certainly reduce some of the administrative complexities of the program, and fee schedules by jurisdiction could eliminate any confusion among beneficiaries or physicians about what amounts Medicare will pay. (Fee schedules by jurisdiction could eliminate all variation in approved charges within a jurisdiction.) To a certain extent, a national fee schedule might also make resistance to physician price increases easier for private market payers in relatively high cost States. Further, if there is significant competition between private insurers in the affected jurisdictions, the imposition of a national fee schedule would not necessarily contribute to market-wide price increases for physician services in the relatively low cost States even though the physicians in those States might increase submitted charges in response to the increase in Medicare payments.

On the other hand, neither a national fee schedule nor even a set of 53 statewide fee schedules is a requirement.[16] Although it is a national program, Medicare must operate in local markets across which the costs of operating a physician practice—including the opportunity costs of the physicians' own time—are not uniform. In fact, given that the market prices of specific physician services differ across the country, the provision (through those markets) of a uniform real level of benefits to Part B enrollees would require that different prices be paid in different jurisdictions. (In fact, a substantial factor in the origin of the "usual, customary, and prevailing" within Blue Shield Plans was the demand from national purchasers, such as the automobile manufacturers, for consistent paid-in-full benefits for members in all parts of the country (122,312).) Paying the same price for a particular service in all parts of the country would certainly imply large interregional transfers of funds within the Medicare program, and one would expect significant changes in beneficiaries' access to assigned services.

What would be useful, if not required, would be an explicit effort to monitor the continued justification both for maintaining the level of differences in approved charges among jurisdictions and even for maintaining separate locality jurisdictions. Because program administration is eased and provider and beneficiary understanding can be improved when there are fewer rather than more localities in any State, reducing the number of localities to only those with reasonable justification is a plausible goal. There may be some negative spillover effects on assignment rates concomitant with locality consolidation that should be weighed in advance against anticipated benefits.[17]

Specialty Variations

One other source of variation in approved charges per unit of service is the use of specialty-specific groupings of physician practices in implementing the CPR fee determination process. In the 1984 fee screen year, Medicare carriers established prevailing charge limits by specialty in all areas of the country except Florida, the area of Kansas served by Blue Shield of Kansas, North Dakota, South Dakota, and the area of New York served by Blue Shield of Western New York (471). All of the other carriers have established that there may be some services for which approved charges may be influenced by the specialty of the physician who performed the service.

This approach may take the form of two prevailing charge screens, one for "generalists" and the other for "specialists." Alternatively, separate prevailing charge screens may be established for each of several sets of specialties. South Carolina, for example, has 33 prevailing charge screens, and Pennsylvania has 58 different groups. Although each physician's *customary* charge for a particular procedure is established solely with respect to his or her own submitted charges for that procedure, in jurisdictions that recognize more than two specialty distinctions, two or more specialty-specific *prevailing* charges might be established for the procedure. As a result, two physicians of different specialties with identical customary charges might have different approved charges for the same procedure.

In fact, because of physician specialization, most of the roughly 7,000 physician procedures will have specialty-specific prevailing charges whether or not the carrier in question recognizes specialty distinctions. For example, relatively few cataract operations are performed by physicians who are not ophthalmologists. As a result, the distribution of ophthalmologists' customary charges will determine the prevailing charge for this type of procedure even where all physicians' charges for the procedure are combined to determine a single prevailing charge.

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[16] Fifty States plus the District of Columbia, Guam, and Puerto Rico.

[17] Colorado consolidated its localites into a single locality in 1976. Assignment rates declined in each area of the State following the consolidation, consistent with the declining trend in assignment rates observed at that time in all parts of the country. Assignment rates declined the most, however, in those areas where prevailing charges were reduced as a result of the consolidation (394).

Specialty-specific prevailing charge screens that may make a difference involve those services that are performed by physicians of many different specialties. The most prominent of such services are visits (which account for 57 percent of all physician services provided to Medicare beneficiaries and 33 percent of total approved charges (247)). Among the prevailing charges in fee screen year 1982 for a selection of 16 specific types of office or hospital visits, differences between general practitioners and internists were observed of up to 53 percent (494). Further, the prevailing charge for the general practitioners was lower than that of the internists in 15 of the 16 cases.

Effects of Maintaining Separate Specialty Charge Screens.—Under the CPR system, however, the prevailing charges set only a maximum on the approved charge for a particular set of physicians; each physician's customary charge also establishes a unique limit that may be the effective constraint on the approved charge. Because the approved charge for a service from a particular physician will never exceed his or her customary charge for that service, the major effects of establishing separate charge screens by specialty involve primarily those physicians in each specialty whose customary charges are high relative to their peers. The actual effects of any specialty consolidation or partition would depend on the relative volumes of service for the specialties in question and the degree of overlap in the distribution of customary charges among those specialties.

For example, if one ignores for the moment the effects of the MEI, the results of creating two specialty screens where formerly there was one might be as follows: If the service volumes of the two specialties were comparable but the customary charges of one specialty were no higher than the 50th percentile of the other, the partition would raise the approved charges of only those physicians in the higher charge specialty whose customary charges were above the 50th percentile. It would lower the approved charges of only those physicians in the low charge specialty that were above the 75th percentile in that specialty because all other physicians in that specialty had been unaffected by the initial prevailing charge and would remain unaffected by the new one. If the service volume of the lower charge specialty were insignificant compared to the other, the partition would have little effect on the higher volume, higher charge specialty, while reducing the approved charges of only those physicians in the low volume, low charge specialty which were above the 75th percentile in that specialty. Finally, if the service volume of the higher charge specialty were insignificant compared to the other, the partition might have a slightly negative effect on the approved charges of the higher volume, lower charge specialty above the 75th percentile in that group, while raising the approved charges of most of the physicians in the low volume, high charge specialty.

For the most part, maintaining separate prevailing screens for different specialties permits higher approved charges for the highest priced of the higher priced specialties and reduces the approved charges of the highest priced of the lower priced specialties. The effects on the beneficiaries of maintaining separate specialty distinctions are not unequivocal. The out-of-pocket costs of a beneficiary who receives service from one of the relatively low priced physicians in either of two specialties would be virtually unaffected by creating separate prevailing charges. The patient who receives service from a high priced doctor in the lower priced specialty will face reduced coinsurance but possibly a higher amount of nonassigned liability. Similarly, the patient who receives service from a high priced doctor in the higher priced specialty will face increased coinsurance but a somewhat lower level of unassigned liability.

Considerable attention has been given to comparisons of the prevailing charges of general practitioners and "specialists" due to the availability of the Medicare prevailing charge directories (513). Although there is some concern that such differentials may encourage specialization, there is no evidence that fee differentials in and of themselves have much influence on specialty choice (438), and no one has seriously suggested that the relatively low fees paid by Medicare are solely responsible for the declining numbers of general practitioners. There is some question about the appropriateness of allowing individual physicians to declare themselves specialists and take advantage of higher prevailing charges (475).

Recent analyses of the distributions of approved charges for individual procedures have found that, compared to surgeries, a much greater proportion of physician visits have approved charges equal to the prevailing charge (247,294). Where the MEI (or market competition) has compressed the distribution of approved charges within specialties, changes in specialty distinctions can have more dramatic effects. Juba estimated that if a fee schedule had been adopted based on average approved charges in South Carolina in 1983 that did not recognize specialty differentials, Medicare revenues *for office visits* for general practitioners would have increased 19.6 percent. Family practitioners would have observed an increase of 16.6 percent, and internists would have observed a *decrease* of 16.5 percent (247).

These findings suggest a difference between fee schedules and CPR. Because of the presumption that fee schedule amounts will provide a limit for all physician payments—not just payments for the physicians with the highest fees relative to their peers, specialty distinctions may have more significant financial implications under a fee schedule than under CPR.

Different Fees for Different Physicians.—There are no data with respect to the number of distinct specialties that have billed Medicare carriers for specific physician procedures. Office visits and hospital visits—which account for 33 percent of Medicare approved charges (247), however, are provided and billed by most of the medical specialties and subspecialties. It is commonly accepted that most surgeries are primarily specialty specific, but here, too, there may be instances where some fraction of particular surgeries may be performed by physicians outside of the specialty considered most likely or most appropriate to perform that procedure ("modal" specialists). How does one determine the "right price" in these instances, and should that price be the same as is paid to the modal specialists?

The common justifications for recognizing higher approved charges for specialists compared to general practitioners involved either higher quality or qualitatively different services provided by specialists even though the procedures (such as visits) may have the same label. Office visits of internists, for example, have been found to be 46 percent longer than visits to general and family practitioners (548). Although physician time is important, time alone may not fully describe the differences in professional effort that may be involved or the resources of knowledge and skill that may be brought to bear by the physicians in question.

In order to account for such differences between physician services, various observers have introduced the concept of skill, complexity, urgency, intensity, stress, and severity. Although the concepts differ from one another, they are all interrelated with respect to the utilization of physicians' personal resources. Basic skills involve the clinical judgment needed to diagnose and choose appropriate therapeutic procedures. Complexity reflects the technical skills needed to perform the procedure. A patient's severity and the urgency of his or her medical situation will influence both the intensity of the physical or mental effort required of the physician and the stress due to the potential risk of the procedure in question.

Previous studies have found a fair degree of consensus among physicians with respect to these types of complexity rankings across individual physician services (225,226,227,422). There is no empirical literature on whether such differences are evident with respect to a set of specific procedures performed by physicians of different specialties.

Physician Opportunity Costs.—One might argue that physicians in different specialties elect to invest different amounts of time in specialty training, and that payment differentials should merely reflect such differences. Various authors have used a "returns to training" adjustment to account for differences in physicians' incomes and, notably, differences between the costs of various physician services (227).[18]

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[18] If anything, these studies of income differences have tended to suggest that payment levels to specialists more than compensate those physicians for their additional investments in training (72,113).

When applied to specific physician services, however, this argument involves a potential double adjustment for differences across specialties in physician opportunity costs. The problem is as follows: Although physicians do make an investment of time and money in obtaining specialty training beyond the "intern" level, part of the return on that investment is the "specific training" (31) skills that allow the performance of relatively complex—and more highly paid—services. In theory, services that involve primarily the "general training" skills that all physicians acquire will not warrant additional payment. If, for example, a gastroenterologist perceives the opportunity costs of the professional time devoted to an office visit in terms of the payments available for performing an endoscopy, it may be rational for that physician to bill accordingly. However, unless it can be shown that beneficiaries' access to comparable specialists' services suffers or that the Medicare program can make operational a valid option demand[19] for that physician's more specialized skills, it may not be rational for Medicare to pay higher approved charges for that visit.

Practice Status.—Because the arguments for the use of board certification as a basis for payment differentials are essentially a refinement of the general specialty differential arguments, these arguments will not be repeated in this section. The arguments with respect to higher payment levels for teaching physicians do involve a different perspective. In particular, teaching physicians may provide an adjunct service—teaching of new physicians—at the same time that they provide strictly medical services to Medicare beneficiaries. In addition, some may argue that because the opportunity costs of a teaching practice are high, higher payments than otherwise available for comparable services will be necessary to retain highly qualified physicians in the role of teachers.

With respect to the first argument, Medicare has recognized a share in hospitals' direct and indirect education and training expenses of health professionals even under the prospective payment system. This situation might tend to legitimize the argument for higher payments for such physicians. Alternatively, one can argue that Medicare or other governmental contributions for such expenses should be made explicitly. Payments embodied in allowed charge differentials for teaching physicians could contribute to inequitable variations in beneficiary liability just as much as any locality or specialty differential. With respect to the question of the opportunity costs of teaching, one might want to examine evidence that the quality of the teaching staffs in the country have suffered due to relatively low payments available under Medicare before proceeding to raise payments in that regard.

Variations by Site of Service

Comparable though not necessarily identical services may be observed to have both differing customary charges *and* prevailing charges for a single physician practice depending on the site of service. In the HCFA Common Procedure Coding System (HCPCS) and most other physician service taxonomies, different procedure codes are assigned to physician encounters—visits—according to where they occur. Thus, one can have a limited[20] (subsequent) visit in the physician's office (CPT-4 code 90050); in the patient's home (90150); in the hospital (90250); in a skilled nursing facility, intermediate care facility, or other long-term care facility (90350); in a nursing home, boarding home, domiciliary, or other custodial care facility (90450); in an emergency department (90550); or in a critical care unit (99172). (A limited visit may also be provided as a consultation (90641) or for the purpose of issuing a second opinion (90650) without regard to site (85).)

Average prevailing charges across the country (for fee screen year 1982) exhibited the pattern that for a given category of visit (such as limited or intermediate) a hospital visit commanded a higher allowed charge than a nursing home visit, which in turn was higher than an office visit (494). Average prevailing charges in that year ranged from 11 to 32 percent higher for the inpatient visits compared to office visits. If one assumed that the medical content of the visits was comparable, this pattern implies an incentive to favor the hospital as a site of service where *additional* physician practice costs, if any, for hospital visits were less than 11 percent higher than comparable office costs. (One might also note that the regulations promulgated with respect to physician services performed in an ambulatory surgical center provide for physicians to be paid 100 percent of approved charges on those services whether provided in an ambulatory surgery center or hospital outpatient department, *if they accept assignment*. Although accepting assignment in this case may lead to a reduction in a physician's bad debts, that physician's total expected revenues may still be greater when assignment is not accepted for those services. Further, whether the physician is paid more for ambulatory surgical services than for the same services provided to inpatients depends on the relevant array of customary and prevailing charges. A physician's total expected revenue may remain higher for hospitalized patients.)

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[19] An option demand would involve a payment for a service that although it may not be used by the purchaser is valued for its existence as an option.

[20] The definition of a "limited" service is provided in footnote 11 to this chapter.

The arguments with respect to site differentials revolve around two questions. The first involves the issue of whether existing differentials inappropriately influence the site of care, particularly when in-hospital payments exceed those for services that might otherwise be provided in a physician's office. Second, for services provided outside a physician's office, there is the perception that some of the practice costs are not paid by that physician, and hence payment to the physician should be lower.

For the most part, the first issue arises for separately billed physician visits, not for surgeries or interpretations. Prevailing charges for office visits have been shown to be lower than those for hospital visits of ostensibly the same variety (494). With respect to the second issue, it is argued that since physician's overhead costs account for roughly 40 percent of gross professional revenues, payments for services provided in outpatient departments, for example, should be limited to 60 percent of payments allowed for comparable services provided in the physician's office.

The first issue regarding payments for inpatient visits may be a case where the nomenclature of physician services may be misleading. A limited hospital visit may be very different from a limited office visit even though both are described as limited visits. On the whole, patients seen in hospitals are sicker than those who are ambulatory. And on average their verified medical complaints may require more physician attention than the reported symptoms of their ambulatory counterparts. If there are some circumstances for which physician hospital visits are warranted to be cursory, that situation may argue for a single, per admission hospital care payment rather than daily visit payments, not necessarily for reducing daily payment rates to the level of office visit payments.

With respect to both issues, differentials in payment may be compared to differentials in costs, including both variable costs with respect to the site of treatment and fixed costs of the physician's office or primary place of practice. Although physicians do have the use of highly qualified technical personnel in outpatient departments or emergency rooms, those persons, for the most part, are not substituting for similarly trained individuals in the physician's office. Physicians' costs for providing such services outside of the office may be lower than they would be otherwise, but most physicians bill only for a professional component for such care; they do not bill for the cost of services provided by the institution. Most physician's office employees are bookkeepers, receptionists, or secretaries. In effect, their compensation is a fixed cost to the physician that is unaffected by the amount of professional time spent on practice outside the office. Variable costs with respect to site may be limited to drugs and supplies, which represent 4 percent of physicians' gross revenues (117).

Differences Among Procedural and Nonprocedural Services

In addition to the obvious issue about the justification for establishing different approved charges for what appear to be identical services, there have also been questions raised about the appropriateness of apparently large differences in relative approved charges for different services. In particular, there is some concern that "procedural" services are overvalued compared to "nonprocedural" services. One HCFA study found that even after adjusting for differences in complexity, physicians were reimbursed as much as four to five times more per hour for inpatient surgery than for office visits (227). Even within the office setting, the lack of additional reimbursement for such primary care services as history taking or nutritional counseling provided during a visit is in sharp contrast to the additional fees that can be generated by ordering and/or interpreting an electrocardiogram (EKG), performing an endoscopy, or providing laboratory tests. To the extent that physicians respond to relatively lower reimbursements for nonprocedural services, fewer of these services will be provided to Medicare beneficiaries with a possible increase in the subsequent demand for more expensive curative or ameliorative services. To the extent that net revenues from procedural services exceed those of the nonprocedural services, there may be a financial incentive to provide more of such services than would be appropriate on strictly clinical grounds.

There has been a great deal of recent interest in identifying whether the extent of the differences observed between payments for procedural services and those for less technical nonprocedural services are warranted (16,17,103,136,195). There are a variety of reasons why the actual payment rates for specific services might differ from one another on either an absolute basis or as expressed in payments per unit of time. Such differences in payment may be due to differences in patient characteristics including health status differences, differences in the physical and mental demands on the physician occasioned by the service and/or circumstances in question, and differences in the length of training invested by individual physicians. The question remains whether the present physician payment systems—in which Medicare is only a subsystem—overcompensate for some of those differences. In particular, since the beneficiaries of the perceived overcompensation are also physicians in specialties that have relatively high estimated net incomes, namely, surgery, there is an issue of whether these perceived imbalances should be redressed concomitant with the initial implementation of any physician payment reform.[21]

Were overcompensation to be verified, the time of conversion to a new payment system might be an opportune one. Any major modification of Medicare's physician payment system is likely to embody some years of conversion, much as the recent implementation of the prospective payment system for hospital payments. If there is a problem that needs correcting, delay until after the conversion might simply make a subsequent correction that much harder to implement. The question remains, however, how to identify whether there is a problem.

The arguments and evidence on procedural/nonprocedural imbalances are as follows: physician payments for nonprocedural services, i.e., visits, are low compared to surgeries in terms of payment per unit of time spent with patients (227); specialties in which the bulk of practice involves procedural services receive higher net incomes than those specialties more heavily concentrated in nonprocedural services (354[22]); estimated rates of return to training are higher in medicine than in other learned professions and within medicine, higher in those specialties in which the procedural services are concentrated (72,115); patients' health would be improved if they received more primary/preventive/nonprocedural services, which in turn would be more available if those services were paid higher fees (336).

Although the price and income differences may be evidence of imbalances, it is not clear that those differences alone are evidence of a problem, much less a problem to be redressed by Medicare. In a market economy, one would expect periodic imbalances between supply and demand and reductions over time in those imbalances as physicians, in this case, responded to just those market signals that are being produced. In a simple world, one would expect that more physicians in training would enter the surgical specialties and that more students in general would enter the profession of medicine because the returns to medicine exceed those of other learned professions. Long-run trends in medicine are consistent with such "corrections." There are more physicians per capita, but fewer physicians not pursuing a specialty.

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[21] A specific proposed remedy is the development of a resource cost-based relative value scale, which is reviewed in ch. 5.

[22] The author reports an increase in internists' net incomes relative to changes in the Consumer Price Index, and states: "This suggests that [internists] have begun to succeed in their long-standing battle to reduce the third-party reimbursement gap between cognitive and procedural services."

Many observers would be unwilling to wait for the long run to arrive. They would assert that although some differences in payment are expected, the observed differences represent actual discrepancies in payment policy that are either not right in and of themselves or not right in that these payment differences lead to incentives that may inappropriately influence medical decisionmaking.

With respect to the "correctness" of fee (or income) differences, there is no consensus. For example, in fee screen year 1984, the average prevailing charge for a cataract extraction was $981.77, nearly 50 times higher than the average prevailing charge for a limited office visit (532). During that same year, the median income of ophthalmologists was estimated to be $150,000, compared to a median income of $89,660 for internists (354). The face validity (or lack of validity) of such payment/income differences, however, rests primarily in the eye of the beholder. Whether ophthalmologists or internists or both are paid too much or too little is an open question.

There is potential consensus with respect to whether such payment differences either inappropriately influence medical decisionmaking or threaten beneficiaries' access to care. If the relative approved charges of procedural services were so high as to lead to the provision of services of zero or negative benefits to patients, many physicians would agree that those prices were too high.[23] On the other hand, if the relative approved charges of nonprocedural services were so low that physicians providing such services refused to see Medicare patients and if, as a result, those patients' health deteriorated, many would agree that those prices were too low.

Verifying either of these states of the world in the current state, however, has proved elusive. There is a host of literature on variations in the use of hospital services and individual surgical services (272). None of these studies has identified a correlation between levels of use and levels of fees. Various observers have claimed to identify specific surgeries that may have been provided in excess, but there is no indication that this surgical excess has been associated with excessive reimbursement rates. At the same time, there are no studies indicating that any particular groups of Medicare patients have not had access to needed health care services due to low reimbursement rates. Further, recent empirical evidence on the lack of dramatic effects for those who have forgone primary/preventive care (343,348) suggests that the health improvement argument for raising nonprocedural fees may be overstated.

Where additional arguments might be made and where sufficient evidence may yet be developed involves differences in beneficiary access to specific types of health care services in terms of differential out-of-pocket liabilities with respect to different types of physician services. There is some evidence that reasonable charge reductions by carriers are relatively higher for visits than for surgeries (247,294), that assignment rates prior to 1984 were somewhat lower for primary care specialties than for surgical ones (247), and that beneficiary out-of-pocket expenses, *if collected*, were a larger part of total Medicare billings by the primary care doctors than for surgeons and radiologists (247). This situation may suggest that it is harder for beneficiaries to secure nonprocedural services.

New vs. Old

Finally, one other pattern observed among approved charges is that services of newer vintage or those that are provided by physicians of newer vintage have higher approved charges than those of older vintages. Specifically, new physician practices appear to have higher customary charges than more established ones, and newly introduced physician procedures have higher customary and prevailing charges than those procedures that have been commonly accepted for a longer time. With respect to a carrier's assessing claims from new physicians, there is no claims experience from which to compute a customary charge. Carrier rules have therefore been established to assign a customary charge in such cases by default. This default customary charge is equal to the 50th percentile of the distribution of comparable customary charges for the procedure in the relevent locality. As a result, new physicians can have approved charges that, by definition, may exceed those of half of their more established colleagues. Prior to the freeze on submitted charges imposed by the Deficit Reduction Act of 1984 those more established colleagues *were not* prohibited from raising their own charges to retain a relative allowed charge position more in keeping with their experience.[24]

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[23] Economists would argue that the price of a particular procedure was too high if services were provided at a price that exceeded the value of the change in health status expected to result from a particular procedure.

The question of the appropriateness of relatively higher approved charges for "new" procedures is more subtle. Very often a new procedure will require the acquisition of new skills or new equipment. The extra care required to execute the new procedure may require more time or place more stress on the physician performing the procedure for the first time. The relative value of the physician services involved in performing the procedure may be relatively high, and initial approved charges will reflect this. Although over time one would expect this relative value to decline as performance of the procedure becomes more routine, both the perceived relative value and the submitted charges of the procedure tend to become embedded in the structure of relative charges within a particular specialty. Since there is no periodic "zero-based" reevaluation of charges for specific procedures, the structure of approved charges simply drifts upward over time. (This is consistent with and may exacerbate the perceived imbalances in approved charges between procedural and nonprocedural services.)

For example, coronary artery bypass surgery has been cited as a procedure that when first introduced required extraordinary expertise and enormous amounts of time. Initially, 3 or 4 procedures per week were a heavy workload, but today, some surgeons perform 3 to 4 procedures in 1 day. Furthermore, many of the surgeons' earlier tasks are now carried out by other professionals who bill independently from the surgeon. Surgeons' fees have not dropped but have increased more than the rate of inflation (403). Both cataract surgery and blood chemistry tests, in particular, have also been cited as examples of this phenomenon (46).

Lack of Variations Due to Quantity Discounts

Although Medicare reimbursements may account for only 17 percent of physicians' gross professional revenues, there may be some services for which Medicare revenues represent the bulk of all purchases. One might expect Medicare to get a better bargain in purchases of those services compared to physician services that are little used by Medicare beneficiaries. Table 2-12 indicates the proportion of specific inpatient services that are provided to elderly persons—who can be presumed to be Medicare patients. Although the reasonable charge reductions inherent in the cur-

Table 2-12.—Elderly Population's Share of Market for Selected Inpatient Surgical and Diagnostic and Therapeutic Procedures, 1983

Procedure	Market share represented by population 65 and over (percent)
Inpatient surgical procedures:	
Insertion of prosthetic lens	82.8%
Extraction of lens	79.5
Pacemaker[a]	79.4
Prostatectomy	76.8
Arthroplasty and replacement of hip	74.2
Partial gastrectomy/resection of intestine	59.7
Dilation of urethra	42.9
Mastectomy	37.9
Direct heart revascularization	35.1
Open heart surgery	32.0
Open reduction of fracture	31.4
Arthroplasty and replacement of knee	27.9
Repair of inguinal hernia	27.5
Skin graft (except mouth or lip)	26.0
Inpatient diagnostic and therapeutic procedures:	
Endoscopy	51.4%
Radioisotope scan	47.0
Bronchoscopy	44.5
Computerized axial tomography (CAT)	42.8
Esophagoscopy and gastroscopy	38.6
Arteriography and angiocardiography	38.3
Diagnostic ultrasound	35.8
Pyelogram[b]	33.8
Cardiac catheterization	27.2

[a] Includes insertion, replacement, removal, and repair of pacemakers.
[b] An X-ray highlighting the kidney and urinary tract.

Data source: Table 7, Advance Data, Sept. 28, 1984, No. 101, Vital and Health Statistics, National Center for Health Statistics, Department of Health and Human Services, Public Health Service.

SOURCE: I. Burney and G. Schieber, "Medicare Physicians' Services: The Composition of Spending and Assignment Rates," *Health Care Financing Review*, forthcoming.

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[24] A common misperception among physicians, however, was that Medicare "locked" them into a set of fee screens, over which successively newer cohorts of physicians would leapfrog, leaving established physicians financially behind. Patients' expectations, if not their potential responsiveness to price changes may have inhibited physicians from raising charges as much as desired, but this outcome was not a function of Medicare regulations.

rent CPR system may be considered to be a form of quantity discounting in and of themselves, one might expect that greater reductions would be observed for those services primarily provided to Medicare beneficiaries. In fact, this does not appear to be the case. In 1983 in South Carolina, for example, Medicare approved charges were roughly 75 percent of billed charges for all services, but for cataract extractions—the most common Medicare surgery in that State—approved charges were 90 percent of billed charges (294).

Uneven Effects of the Medicare Economic Index (MEI)

In 1972, in response to concerns that increases in physician fees under Part B were the cause of rather than the result of medical inflation, Congress mandated that an additional fee limit—an economic index—be included in the reasonable charge determination process. This index was to reflect changes in physicians' operating expenses and changes in general earnings levels and was to be used as a cap on prevailing charges.[25] Prior to the imposition of the index, the maximum reasonable charge allowed by the carriers was equal to the "prevailing charge." The prevailing charge for any service was computed by the Part B carriers as the lowest customary charge that was no less than 75 percent of all customary charges when weighted by the volume of services billed. With the advent of the MEI, the value of the maximum reasonable charge was established as the "adjusted" prevailing charge, which was the lesser of: 1) the unadjusted prevailing, i.e., the 75th percentile; or 2) the product of the prevailing charge from fee screen year 1973 multiplied by the value of the MEI (117).

Although some observers contend that the effect of the MEI has been to create de facto fee schedules, the actual effects are much less certain. The MEI has been constraining, and in the early 1980s, it appeared to be becoming more constraining over time. In fact, however, in the *Medicare Directory of Prevailing Charges* the number of entries that indicate those prevailing charges that were due to the MEI declined each year from 1981 to 1984 (532). In addition, a study of fee screen year 1980 data from California for a selection of physician procedures found that the percentage of customary charges that might be directly affected by the MEI ranged from 24.5 percent of eye exams from ophthalmologists to 99.7 percent of basic anesthesiology services from anesthesiologists (187). Basically, this range goes from no effect to total effect. Further, an analysis of calendar year 1983 carrier data from the State of South Carolina showed that 43.2 percent of approved charges were established at the level of the adjusted prevailing charge (see table 2-13). Because the adjusted prevailing is the lower of the MEI cap or the actual 75th percentile, 43.2 percent must be considered an upper bound estimate of the impact of the MEI in that State (247). Finally, although some have alleged that the MEI has unfairly prevented reimbursements from rising in rural areas (415), California data show instances where in capping prevailing charges in urban areas, the MEI, in effect, prevented urban/rural disparities from increasing (359).

Until recently, in performing the reasonable charge reduction process, carriers did not commonly record the specific limit—actual charge, customary, adjusted prevailing, or unadjusted prevailing—used to determine the approved charge for a specific claim. Because of this lack of data on the specific reasons for reasonable charge reductions and amounts of reductions by type of limit, there has been no definitive analysis of the impacts of the MEI. Its inclusion in the reasonable charge process does make the process somewhat more cumbersome and potentially more confusing to providers, if not to the beneficiaries. Further, because by constraining some reimbursements but not others the MEI can lead to either increased or decreased payment differentials, the MEI also contributes to variations in payment levels across specialties and geographic areas.

Summary of Variations

The review of issues with respect to Medicare's physician payment system began with an indica-

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[25] Inputs to the MEI are of two types, one reflecting increases in physician practice costs and the other reflecting increases in general earning levels. Of the first type, there are six practice costs measures: wages and salaries, office space, drugs and supplies, automobile expenses, professional liability insurance premiums, and all other practice expenses. General earnings levels measures included in the MEI are average weekly earnings of nonagricultural production and nonsupervisory workers and changes in productivity (117).

Table 2-13.—Distribution of Medicare Approved Charges Across CPR Limits by Specialty and Type of Service (South Carolina, 1983)

	CPR limit			
	Billed charge	Customary charge	Prevailing[a] charge	Other[b]
Specialty:				
All	15.7	38.7	43.2	2.3
General practice	20.7	20.5	56.8	2.0
Family practice	15.2	22.9	59.0	2.9
Internal medicine	17.4	28.5	51.2	2.9
General surgery	20.8	49.7	28.4	1.1
Orthopedic surgery	13.1	38.1	48.1	0.7
Ophthalmology	12.8	72.3	14.6	0.3
Radiology	12.9	40.4	39.7	7.0
Type of service:				
Office visits	12.4	19.7	65.2	2.8
Hospital visits	11.4	22.4	64.6	1.7
Other medicine	27.0	34.7	37.0	1.2
Surgery	15.4	53.4	30.3	0.9
Radiology	13.0	41.2	38.9	6.9

[a] Adjusted prevailing charge

[b] Any amounts not equal to either the billed, customary, or prevailing limits

SOURCE: D. Juba, "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, November 1985.

tion of beneficiary and provider confusion. In the sections that followed some of the other sources of beneficiary and provider confusion were themselves illustrated as issues. In the Medicare program, one can observe variations in annual expenditures, variations in the proportions of beneficiaries who meet the deductible, and variations in assignment rates. In addition, approved charges for a particular service will vary by geographic area, specialty of the physician, place of service, type of service, and "cohort" of either the service or of the physician performing the service. There are also variations in use of physician services across the country, and these variations have not been found to correlate with variations in approved charges. Finally, there do not appear to be variations in approved charges by quantity of service provided to Medicare beneficiaries, but there are unpredictable and uncertain variations in approved charges due to the MEI.

Medicare is a national program with roughly 30 million beneficiaries receiving physician services in thousands of communities in the United States and abroad. Some of the variability in the program should be expected and much of the variability is desirable.

What has not been included in the Medicare program is an organized and timely review of Medicare's experiences to identify potential disparities across the many dimensions of the program and to verify or refute the existence of such problems. Time and again one finds, "There are no data." Although this may be taken to imply that there are no problems, in fact, it is more likely to betoken the lack of solutions for the problems that do become evident.

THE CHANGING CONTEXT OF PHYSICIAN PAYMENT

Changes in Medicare payment policies are being discussed in a context that is itself in flux. From both the beneficiary and the provider sides of health care delivery, developments taking place outside of Medicare are likely to affect program expenditures independently of changes in payment policies. The remainder of this chapter examines the implications for future Medicare expenditures of changes in payment policies regarding hospitals; results from certain trends in the demographics of the elderly population, who make up 97 percent of Medicare beneficiaries (563); and developments with respect to the number and practice arrangements of physicians.

Changes in Policies of Hospital Payment

In October 1983, Medicare began paying for the operating costs of beneficiaries' inpatient care on the basis of DRGs. Until that time, Medicare reimbursed hospitals on the basis of the estimated costs that they incurred for Medicare patients. This payment method encouraged the adoption and use of expensive technology rather than the efficient diagnosis and treatment of medical conditions.

Beginning with the hospital payment reforms introduced in the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) (Public Law 97-248), the link between costs and Medicare payment levels was reduced. Under the new prospective payment system, Medicare pays a fixed amount based on diagnosis for the operating costs associated with inpatient admissions. Within each diagnostic category, the hospital has an incentive to use resources judiciously, including staff and equipment, and to reduce the length of stay. Incentives remain, however, to increase the number of admissions.

During the first year of Medicare's DRG-based hospital payment system, lengths of stay for elderly people fell much more than the secular trend even though the prospective payment system was applied to a relatively small fraction of the hospitals in that year (489). Whereas the length of stay for people over age 65 had been falling by 1.9 percent per year, the length of stay during fiscal year 1984 fell 10.2 percent. Contrary to expectations, Medicare hospital admissions also declined during fiscal year 1984.

The rate of increase in Part B expenditures fell substantially during the first year of the prospective payment system. During fiscal year 1984, Part B Medicare payments rose only 12 percent, in contrast to increases exceeding 19 percent in each of the 5 preceding fiscal years. This reduction is consistent with the likelihood that expenditures for physician hospital visits and consultations would be lower for patients with shorter lengths of stay. It is unlikely, however, that shorter lengths of stay accounted for all or even most of this reduction in Part B increases. Since hospital visits and consultations account for about 20 percent of Part B expenditures (68) and lengths of stay fell 10.2 percent, one might expect the growth in total Part B expenditures to have fallen about 2 percent because of DRG payment. Other factors, such as declines in price increases, may help to explain the overall decline.

Changes in the Elderly Population

The aging of the U.S. population is a long-term trend that is projected to continue into the next century. From 1970 to 1980, the cohort of people 65 years or older grew from 9.8 to 11.3 percent of the population. This cohort will account for 13.1 percent of the population in the year 2000 and 21.7 percent by 2050 (see table 2-14). Within the elderly population, the age structure is also changing. Those age 75 and older comprised 4.4 percent of the population in 1980, but will reach 6.5 percent by the year 2000.

The growth of the elderly population stems mainly from previous changes in birth rates. Current increases in the 65 to 74 age group reflect higher birth rates after World War I. The size of this age group is projected to fall slightly by the year 2000 because of lower birth rates during the Depression and then to rise sharply as the baby boom of World War II reaches age 65 (498).

Increases in life expectancy, although less important in explaining changes in the elderly population, have been substantial. A woman of age 65 could expect about 17 more years of life in 1970, but will be likely to live almost 21 additional years in the year 2000 (see table 2-15). The age-adjusted death rate for people age 65 and older fell 22 percent from 1970 to 1982, with a much faster decline for women than for men (550,563).

A pattern of higher use and expenditures can also be observed among the older age groups within the elderly population. As previously noted

Table 2-14.—Elderly Population in the United States, Actual and Projected, by Age Cohort, 1970-2050[a] (numbers in thousands)

Year	Total population all ages	65 to 74 years		75 to 84 years		≥85 years		≥65 years	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
1970	203,302	12,447	6.1	6,124	3.0	1,409	0.7	19,980	9.8
1980	226,505	15,578	6.9	7,727	3.4	2,240	1.0	25,544	11.3
1990	249,731	18,054	7.2	10,284	4.1	3,461	1.4	31,799	12.7
2000	267,990	17,693	6.6	12,207	4.6	5,136	1.9	35,036	13.1
2010	283,141	20,279	7.2	12,172	4.3	6,818	2.4	39,269	13.9
2020	296,339	29,769	10.0	14,280	4.8	7,337	2.5	51,386	17.3
2030	304,339	34,416	11.3	21,128	6.9	8,801	2.9	64,345	21.1
2040	307,952	29,168	9.5	24,529	8.0	12,946	4.2	66,643	21.6
2050	308,856	30,022	9.7	20,976	6.8	16,063	5.2	67,061	21.7

[a] Projections are middle series.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Decennial Censuses of Population 1900-1980* and *Projection of the Population of the United States 1982 to 2050* (Advance Report), Current Population Reports, Series P-25, No. 922, October 1982, as cited in U.S. Congress, Senate Special Committee on Aging and the American Association of Retired Persons, *Aging America: Trends and Projections* (Washington, DC: U.S. Government Printing Office, Second Printing, 1984).

Table 2-15.—Life Expectancy at Birth and Age 65, by Sex and Calendar Year

Year	Male		Female	
	At birth	At age 65	At birth	At age 65
1970	67.05	13.14	74.80	17.12
1980	69.85	14.02	77.53	18.35
1990	72.29	15.11	79.85	19.92
2000	73.42	15.71	81.05	20.81
2010	73.93	16.08	81.62	21.27
2020	74.42	16.45	82.18	21.73

SOURCE: U.S. Department of Health and Human Services, Social Security Administration, Office of the Actuary, September 1982, as cited in U.S. Congress, Senate Special Committee on Aging and the American Association of Retired Persons, *Aging America: Trends and Projections* (Washington, DC: U.S. Government Printing Office, Second Printing, 1984).

Table 2-16.—Medicare Enrollees Served and Their Reimbursement, by Age, 1982

Age	Persons served per 1,000 enrolled	Reimbursement per person served
Total ≥65	641	$2,439
65-74	600	2,172
75-84	691	2,705
≥85	733	2,960

SOURCE: D.R. Waldo and H.C. Lazenby, "Demographic Characteristics and Health Care Use and Expenditures by the Aged in the United States: 1977-84," *Health Care Financing Review* 6(1):1-29, Fall 1984.

those aged 75 and older are more likely to have Medicare reimbursements and to have higher reimbursements per person served (see table 2-16). Older people have higher expenditures at least partly because they have higher death rates; people during the last year of life have had Medicare reimbursements six times the level for survivors (277,487a).

Health care expenditures for women, who will constitute an ever-growing percentage of Medicare beneficiaries because of their lower mortality rates, have also exceeded the average (213,487a). Among elderly people, the difference is especially pronounced for nursing homes. Women age 65 and older are twice as likely to use nursing homes as men (550).

All of these demographic trends portend increasing health care expenditures for the Medicare program. Greater numbers of people will reach age 65 and be eligible for the Medicare program. Furthermore, Medicare beneficiaries as a group will be older and consist of more women, both subgroups that have higher per capita medical expenditures.

Changes in Medical Providers

Increasing Supply of Physicians

From 1970 to 1980, the number of active physicians in the United States grew from 156 to 197 per 100,000 population (see table 2-17). This increase occurred primarily as a result of Federal support to expand medical school enrollment dating from the late 1960s (168). Since 1982, the Federal Government has moved away from funding medical schools and subsidizing loans for medical students, and both medical school enrollment and medical school applications have begun to decline (96). About one-fifth of the growth in the number of physicians resulted from sizable increases in foreign medical graduates, who in 1982 accounted for 38 percent of hospitals' full-time

Table 2-17.—Active Physicians (M.D.s and D.O.s) in the United States and Estimated Requirements, 1970-2000

Year	Number of physicians	Actual physicians per 100,000 population	Estimated requirements
1970	326,500	156	
1980	457,500	197	
1990	594,600	243	559,300
2000	706,500	271	654,700

SOURCES: U.S. Department of Health, Education, and Welfare, Public Health Service, Bureau of Health Manpower, *A Report to the President and Congress on the Status of Health Professions Personnel*, DHEW Pub. No. (HRA) 79-93 (Washington, DC: DHEW, August 1978 and March 1979); U.S. Department of Health and Human Services, Public Health Service, Health Resources and Services Administration, *Report to the President and Congress on the Status of Health Personnel in the United States, 1984*, DHHS Pub. No. HRS-P-OD 84-4 (5/84) (Washington, DC: HRSA, May 1984); and U.S. Department of Health and Human Services, Public Health Service, National Center for Health Statistics, *Health, United States, 1983*, DHHS Pub. No. (PHS) 84-1232 (12/83) (Washington, DC: U.S. Government Printing Office, December 1983).

staff. The number of foreign medical graduates is expected to grow at a slower rate in the future because of changes in the required examination and competition for the decreasing number of residency positions (524,547). At the same time, U.S. physician graduates are increasing in number, and the orientation of medical practice is shifting away from hospitals.

Even with these expected changes, current estimates project that active physicians will number 243 per 100,000 population in 1990 and 271 per 100,000 by the year 2000 (550).[26] As implied by these ratios, physician increases are expected to continue to outpace population growth. Moreover, physician supply is projected to exceed the estimated requirements for physician services, based on projected changes in the age and sex distribution of the population and adjustments for expected per capita use (547).

The increasing supply of physicians has had implications for availability of and access to physician services. Increasing physician supply has been associated with a change in the distribution of physicians between urban and rural areas and presumably greater availability of specialists in more sparsely settled areas (344). Although physicians have continued to be concentrated in the most populated States, from 1977 to 1981 the number of counties without an active physician fell from 139 to 131 (124). Primary care physicians (general practice, family practice, internal medicine, and pediatrics) increased at about the same rate as total physicians and grew from 56 per 100,000 population in 1970 to 70 per 100,000 population in 1981 (546).

Changes in Physician Practice Arrangements

In addition to the growth in physician supply, a major development in the provision of medical care has been the increasing number of innovative practice arrangements through which physicians provide services to their patients. Indeed, physicians may have sought such arrangements because they felt greater competition from their colleagues for patients and for income. No longer is the typical physician a solo practitioner paid on a fee-for-service basis. From the early 1980s, the majority of physicians have been in practices of two or more physicians (82).

Health Maintenance Organizations.—HMOs have been growing rapidly in recent years. HMO enrollment increased 24.9 percent in the year ending June 1985, and total HMO enrollment estimated at more than 18.9 million in June 1985 may rise as high as 50 million by 1990 (5,464). In 1984 over 16.7 million persons (over 7 percent of the insured population) belonged to 337 HMOs operating in 43 States, the District of Columbia, and Guam (240).

By the end of 1985, 635,000 Medicare beneficiaries were enrolled in HMOs for the equivalent of Part A and Part B services. This number included those enrolled in Medicare demonstration HMOs. Previous Medicare HMO enrollment was 116,000 as of March 1982. An additional 637,000 Medicare enrollees receive Part B benefits from prepaid group practices under the provisions of Section 1833 of the Social Security Act—up from

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[26] The Graduate Medical Education National Advisory Commission methods were developed to set national goals for physician specialty distribution. The "adjusted needs based" approach produced physician requirements as a function of expected national morbidity, which was initially modified by expert opinion. Experts identified morbidity that would require medical intervention and then modified requirements by the estimated constraints of the existing health care system. The Bureau of Health Professions based its estimates of requirements on projected demand for medical services using the "adjusted utilization approach." This approach modified recent existing patterns of medical use with projected population changes, such as age and sex adjustments, and trends in per capita use. The estimates were updated for the 1984 *Report to the President* by refinements in health personnel staffing.

515,000 in March 1982 (533). Under these provisions HMOs or prepaid practice plans can contract with HCFA and provide Part B services on a usual, customary, and reasonable basis. The Medicare population enrolled in HMOs is expected to increase as new regulations under the TEFRA legislation are implemented.

There have been other changes in organizational structure among HMOs that are likely to affect physicians. Health care services organizations are forming multistate chains, and corporations are increasing their for-profit involvement in HMOs. HMOs are also joining forces for joint purchasing decisions and other cost-saving ventures.

Preferred Provider Organizations.—Preferred provider organizations (PPOs) contract with insurers or employers to give care at a reduced price. Since these contracts are individualized, it is difficult to generalize about PPOs. Patients have the option of seeing the preferred provider and receiving full reimbursement or visiting another provider and receiving less than full reimbursement. Although designed to reduce expenditure, as yet no evidence exists that PPOs deliver care at lower cost.

Although unknown as an organizational form in 1977, PPOs have grown in number to 334 (229 in operation) by June 1985. Fifty-six of the operating PPOs were sponsored by doctors, 59 were jointly sponsored by hospitals and doctors, 60 by hospitals, 12 were sponsored by third-party administrators, 54 by insurers, and 11 by individual practice associations (237). A number of States are passing legislation that would either encourage or allow PPO development. California passed such a law, and by the end of 1983, 74 percent of physicians had been offered contracts by PPOs and 36 percent had signed them (77). PPOs are also diversifying to include other than physician services, such as dental and mental health services (383).

Freestanding Ambulatory Care Centers.—Hospitals have offered ambulatory surgery for some time, but the first freestanding ambulatory surgery center was opened in Phoenix, Arizona, in February 1970. By 1984, freestanding surgery centers numbered slightly over 300 (238 open and 65 under development (130)).

Medicare began paying for freestanding ambulatory surgery centers in 1982 under Part B. In an attempt to encourage utilization where appropriate, Medicare reimburses the centers based on complexity of procedure with no copayment or deductible required from patients. In addition, physicians who accept assignment are paid 100 percent of reasonable charges for covered services.

Another new type of practice setting is the freestanding emergency center offering expanded office hours or other increased conveniences to patients often at lower cost than traditional medical care facilities. However, only 9 percent of physicians in 1983 provided some care in such settings, and they averaged only 13 hours per week practicing in such facilities (82).

Implications for Medicare Expenditures

Changes that are occurring in the provision of medical care have less clear-cut implications than those concerning beneficiaries' demographics. Greater numbers of physicians will increase the availability and most likely the accessibility of services to beneficiaries. Independent of physicians' changes in patterns of use or pricing, higher Medicare expenditures can be expected as greater physician accessibility enables the increased demand from more numerous and more elderly beneficiaries to be realized. However, the level and rate of increase of Medicare expenditures may be affected by changes in physician practice arrangements. Such changes are unpredictable. Even the few results to date with respect to alternative practice arrangements may not be generalizable to Medicare beneficiaries, to other physicians, or to other organizations.

Recent policy changes have been intended to moderate the growth in medical expenditures by rewarding hospitals for more efficient resource use and by channeling beneficiaries to less costly sites of care and delivery systems. Although these changes have initially been associated with reductions in the hospital sector and lower increases in Part B expenditures, policy changes only partly explain these declines. Moreover, expenditure changes over a longer period will depend on how physicians, other providers, and plans respond to policy changes as they enroll beneficiaries, use technologies, and price services.

CONCLUSION

Medicare physician expenditures represent 17 percent of gross professional revenues for physicians and 23.1 percent of total Medicare expenses (507). Both the program and the profession of medicine have a substantial relation to one another. This chapter has reviewed some of the aspects of this relation that have been called into question by observers of trends in health care financing.

With the exception of the most recent fiscal year, Medicare physician expenditures have been increasing at rates in excess of 19 percent per year, increases which have exceeded those of most Federal programs. In addition, in examining the distribution of Medicare physician expenditures, there remain substantial variations across many dimensions. These variations suggest to some observers that there exist either potential economies in the program or ways to make the distribution of benefits more equitable. There is little if any consensus, however, on the exact magnitude of specific problems, much less on the value of specific remedies. In the chapters that follow, general approaches to the perceived problems will be outlined and explored with respect to their applicability for reforming Medicare's physician payment program.

Chapter 3

Overview of Alternative Physician Payment Methods Under Medicare: A Framework for Evaluation

> If you don't know where you are going, you will probably end up somewhere else.
>
> —*Lawrence J. Peter, The Peter Principle*

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Chapter 3

Overview of Alternative Physician Payment Methods Under Medicare: A Framework for Evaluation

INTRODUCTION

Because of shortcomings in the present system, Congress and other policymakers are considering alternative arrangements to pay for physician services under the Medicare program. This report analyzes four sets of alternatives:

- modifications to the present system of payment according to customary, prevailing, and reasonable (CPR) charges;
- payment based on a fee schedule, with predetermined payment rates that would be the same for similar services;
- global payment for packages of related services; and
- capitation payment, under which a predetermined amount would be paid for a beneficiary's care during a time period.

This chapter briefly outlines the sets of payment alternatives and variations among them. The second section of the chapter discusses the dimensions across which the alternatives are examined in chapters 4 (modifications to CPR), 5 (fee schedules), 6 (packaging), and 7 (capitation); and introduces certain issues common to several payment alternatives. The chapter concludes with brief descriptions of five medical technologies: pneumococcal vaccination, clinical laboratory testing, cataract surgery, magnetic resonance imaging, and extracorporeal shock wave lithotripsy. These technologies are used in subsequent chapters to illustrate the effect of the various physician payment alternatives on specific technologies.

ALTERNATIVES FOR PAYMENT OF PHYSICIAN SERVICES

The sets of payment alternatives considered in this report vary according to the unit by which medical care is paid. Modifications in the CPR system and payment based on a fee schedule would continue the service as the unit of payment; the packaging approach would base payment on units that could range from ambulatory visits through therapeutic procedures to medical conditions; and capitation (per capita) payment would pay according to the number of beneficiaries. The alternatives also vary according to the scope of medical services, the recipient of payment, and the methods of setting the payment level.

The core interest of this report is physician services, although some alternatives include payments for ancillary services and inpatient care. "Physician services" refers to services that are commonly provided by physicians but are sometimes provided by other professionals or organizations. An example is clinical laboratory tests, which may be performed in a physician's office, an independent clinical laboratory, or a hospital laboratory. Similarly, optometrists provide some services, such as refraction and fitting of corrective lenses, that may be provided by ophthalmologists.

The alternatives discussed in this report concern how the Medicare program could pay for physician services rather than how physicians receive payment for their work. For example, Medicare might pay a health maintenance organization (HMO) or hospital a per capita amount for providing physician services to beneficiaries, but the organization in turn could pay physicians on a different basis, such as salary, fee-for-service, or some combination.

Modifications in Payment Based on Customary, Prevailing, and Reasonable (CPR) Charges

Under this set of alternatives, Medicare would continue to base its payment for physician services on reasonable charges calculated from the customary and prevailing charges billed by physicians and other providers (see app. C). The scope of services included in the payment and the recipients of payment would not change.

What would change is the method of calculating reasonable rates. One set of changes would limit the rates paid for physician services, with the intention of reducing the increase in Medicare expenditures. Some of the options would apply to all physician services, such as lowering the percentile of prevailing charges used to determine allowable charges. Medicare could also contract with preferred provider organizations to care for beneficiaries at discounted rates.

Other options would apply more selectively to services with perceived payment imbalances relative to others. Rates for procedural services could be lowered relative to nonprocedural services, specialists and generalists could be paid the same rates for similar services, or geographic differences in rates could be reduced. Changing relative payment levels for certain services would also be possible under payment based on fee schedule.

Payment Based on Fee Schedules

Like the previous set of alternatives, payment by fee schedules would retain the scope of services and recipients of payment of the present system, but it would alter the method of calculating rates paid by the Medicare program. The schedule of fees would be set in advance of the time period in which they were to apply, with similar rates set for services considered to be similar. Fees could be set on the basis of average charges billed in previous years, the cost of providing the services, or rates negotiated with providers. Fee schedules could also incorporate any changes desired in the relative prices paid for different services depending on their location or content.

Once developed, a fee schedule could be used in different ways. Medicare could treat the scheduled fee as the maximum allowable charge, but pay physicians a lower amount if they billed less. Or, Medicare could pay all physicians the applicable scheduled fee regardless of what was billed. In addition, Medicare could either require providers to accept the scheduled fee as full payment, or could pay beneficiaries the scheduled fee and permit providers to bill beneficiaries for additional amounts.

Payment for Packages of Services

This set of alternatives would package related services and pay for them as a unit. In comparison with the present system, changes could occur in the scope of services, recipient of payment, and method of calculating rates. Calculation of rates for most of the packages would require consideration of variation in resource use among patients and potential financial risk to the physician or other recipient of payment.

The scope of services included in a package could range from a visit under an ambulatory visit package to all physician, ancillary, and possibly facility services under a total episode of care for a particular illness. Collapsing procedure codes would reduce the number of billing codes for services that have little distinction, such as "brief" and "limited" office visits. The codes would be redefined as a single more comprehensive one (in this example, a short visit).

A more diverse package is the ambulatory-visit package, in which an ambulatory visit to a physician and all ancillary services associated with that visit would be paid at a single rate. The rate could vary depending on the patient's diagnosis or reason for the visit. A third alternative, the special-procedure package, would pay a single rate for all physician services (including anesthesiologists and consultants) associated with a single procedure, such as cataract surgery. A variation of this alternative could include ancillaries and facility expenses for ambulatory procedures as well.

Other possible variations of packages are packages for an ambulatory episode of care, an inpatient episode of care, or a total episode of care, which would include both ambulatory and inpatient services. Payment for inpatient physician services for the inpatient-episode-of-care package, for example, could be made according to diagnosis-related groups (DRGs) or other case-mix classifications. Such payments, which would include the services of attending physicians, anesthesiologists, and consultants, could be made to the attending physician, the medical staff, or the hospital.

The goal of this set of alternatives is to contain Medicare expenditures by giving providers financial incentives for the more judicious use of resources, whether they be ancillary services, consultants, or facilities. The intention of payment for a package such as cataract surgery is that the attending physician consider cost more heavily that at present when ordering ancillaries, seeking consultations, or choosing the site for the surgery.

Capitation Payment

Under this set of alternatives, Medicare would pay a fixed amount set in advance and independent of the actual use of services for care to be provided beneficiaries during a certain time period. Although Medicare beneficiaries currently have the option of enrolling in HMOs paid on a capitation basis, capitation payment for all beneficiaries would entail changes in the recipient of payment, scope of services, and method of calculating rates.

The recipient of capitation payment could be a risk-sharing plan, such as a traditional HMO. Alternatively, the payment could be made to geographic fiscal intermediaries, which would receive payments for all beneficiaries in that region. In both cases, beneficiaries would continue to have as one option continuation of present coverage, cost-sharing, and receipt of care from providers paid fees for services. This report considers two variations in the scope of services: 1) all acute and chronic care that lies outside of Medicare's payment system for hospitals facility expenses, and 2) all ambulatory and inpatient services. Calculation of capitation rates would require attention to differences in medical expenditures among beneficiaries and the potential financial risk to the recipients of payment.

Payment of a fixed amount per beneficiary is intended to curb expenditures by giving providers a financial incentive to use the most cost-effective level and mix of medical professionals, sites of care, and other resources in managing patient care. Payment by capitation does not necessarily imply that individual physicians receive payment on a per capita basis, however. If the carrier received the capitation payment, for example, it could still pay physicians by fee for service or some other method.

DIMENSIONS FOR EVALUATING PAYMENT ALTERNATIVES

The payment alternatives discussed in this report are evaluated across five dimensions:

- quality of care,
- access to care,
- cost,
- technological change, and
- administrative feasibility.

These dimensions emanate from the goals of the Medicare program and concerns about its present shortcomings. The Medicare program was intended to help elderly and disabled people who needed assistance in meeting medical expenses (491). Concern with access to good quality care was evident from the start of the program in requirements that providers had to meet in order to participate (487). Later amendments to the Social Security Act added utilization review and quality assurance, first by professional standards review organizations (Public Law 92-603) and later by utilization and quality control peer review organizations (Public Law 98-21). Cost is now a primary issue because current interest in reform of Medicare physician payment has been aroused by ever-rising program expenditures. These three dimensions—quality, access, and cost —are ones by which the medical care system in general and programs in particular are typically evaluated.

Technological change merits attention as a separate dimension because of the great influence that the Medicare program has on this activity as part of Medicare's impact on the financing and delivery of medical care throughout the United States. In addition, administrative feasibility is examined separately from cost and quality, to which it relates, because it pertains to the ease with which changes in physician payment could be implemented.

Quality of Care

Quality of care, given the existing state of medical science and art, is the degree to which actions taken or not taken maximize the probability of beneficial health outcomes (health improvements) and minimize risk and other untoward outcomes. Health improvements include changes in the level of physical, psychological, and social functioning (108).

Quality is a multidimensional concept that depends on both technical and interpersonal aspects of medical care. Technical care entails the application of science and technology and encompasses the preventive, diagnostic, and therapeutic procedures performed for a person's medical condition. Interpersonal aspects or the art of care concerns the manner of the provider in delivering care and communicating with the patient (63,108).

Unlike recent definitions (108,194), this conception of quality does not include clinical efficiency, that is, "the ability of the physician to arrive at a favorable solution to the patient's problem while consuming the minimum amount of resources necessary" (61). Consideration of what care is appropriate for a person's medical condition certainly entails weighing the implications for the use of resources and their costs against the net health benefits that are expected. However, this report considers net health benefits, costs, and efficiency as different concepts. The approach in this report permits examination of the multiple effects of a payment alternative and identification of the tradeoffs that may be needed among cost containment and added health benefits.

This approach is also consistent with the present situation, in which deficiencies exist on clinical as well as efficiency grounds (483). Numerous reports and commissions have concluded that much medical technology has been used with insufficient evidence of its efficacy. In addition, some technologies, such as diagnostic tests or hysterectomy, have been used when they provide little or no additional health benefit and may even harm the patient, while other technologies, such as vaccinations and hypertension monitoring, could greatly improve health if used more extensively (481,482).

Studies to evaluate quality of care have often had difficulty measuring and evaluating outcome, especially the effect on the patient, because information was not available or because a person's health status depended on factors other than medical care. Patient outcome is also difficult to evaluate because it may change over time; whether a patient's health status is judged to be improved may depend on when it is measured. Therefore, many studies have used the process of care, what a provider does for a patient, and the structure of care, the characteristics of facilities or providers, as proxies to evaluate the quality of care. However, specific process measures, such as the use of a certain test, and structure measures, such as board certification of a specialist, are valid proxies only if they are associated with better quality care.

Access to Care

Access is the ease with which a beneficiary can obtain medical care. Access depends in part on the ability of people to overcome financial, spatial, psychological, or social obstacles to obtain care. It also depends on the accessibility of the medical care system to people, which in turn depends on the characteristics of the organizations and individuals that provide care.

Access is related to both quality and cost. The ease with which people are able to obtain medical care affects the kinds of services that they receive and hence affects quality. The extent of patient cost-sharing when services are performed is part of financial access and directly affects the implications of a particular payment alternative for beneficiaries' cost.

Despite its close relationship to these other dimensions, access is considered separately here because of its importance to equity. Not only do physician payment alternatives vary in the financial and bureaucratic barriers to obtaining care that they present, but these barriers may well impede access for some groups, such as poor and frail people, more than others. Separate consideration of access will highlight any such problems for equitable treatment of beneficiaries.

The extent to which physicians accept assignment for Medicare claims is closely related to patients' access to care. If a physician does not accept assignment for a service, he or she can bill that patient for an amount greater than the Medicare-determined allowed charge for the service. This additional amount could impede access to care for patients to whom it presents a financial barrier. However, as discussed in chapter 2, access and assignment are not synonomous. The relationship between the level of assignment and degree of access is not clear because it is not known whether the current rate of assignment represents a real barrier to many patients' ease in obtaining physician services. Nevertheless, it is reasonable to assume that an increase in assignment rates will improve access for at least some patients, and a decrease in assignment rates will reduce access. Thus, changes in assignment rates may be interpreted as changes in the accessibility of the medical care system, even though the current degree of accessibility has not been quantified.

Costs and Efficiency

In subsequent chapters, the implications of physician payment alternatives for medical care expenditures are considered from several perspectives. One is that of the Medicare program. As documented in chapter 2, expenditures on physician services have been rising by as much as 20 percent per year, a particularly disturbing trend in times of growing budget deficits and a particularly noticeable one in light of recent declines in the growth of hospital expenditures.

Another perspective is that of Medicare beneficiaries. The financial implications of a physician payment alternative for beneficiaries may well differ in magnitude and direction from the implications for the Medicare program. Beneficiaries' costs now consist of premium payments for Part B coverage, a deductible amount, coinsurance for certain assigned services (see app. C), and, if the physician's charge exceeds the Medicare approved charge, any balance that the physician bills the patient for unassigned services. Under the current system, in which fees are paid for services performed and physicians have the option of taking assignment, a beneficiary's out-of-pocket costs depend on the volume of services used, the prices charged, and physicians' decisions about accepting assignment and billing beneficiaries above the approved charges.

Costs may also be considered from the perspective of society as a whole. It is possible that Medicare's payment policies or physicians' billing and practice patterns may shift costs from Medicare or beneficiaries to (or from) other payers, such as employers who buy health insurance or State and local governments that are responsible for the medical care of indigent people. Of course, expenditures for medical care constitute income from the perspective of physicians and other medical providers. The payment alternative chosen affects whether these groups gain or lose income compared to the present situation.

The level of costs matters to policymakers who are concerned about Medicare's budget and to beneficiaries who are living on fixed incomes. An issue in addition to the level of costs, however, is the efficiency with which resources are used to deliver medical care. There are two types of efficiency. Productive efficiency describes the performance of a service or delivery of medical care of a given quality with the least expenditure of resources. Allocative efficiency concerns not only whether care is provided as cheaply as possible given its quality and quantity, but also whether the costs expended for the additional care are worth the expected benefits to be gained. Efficiency rather than the level of costs addresses whether resources are being used appropriately in medical care or whether more benefit could be gained from applying them to different uses in medicine or elsewhere in society.

A major shortcoming of present physician payment has been the lack of cost consciousness and financial incentives for efficiency among providers, patients, and payers (129,367). As a result, individual services have often been performed inefficiently, such as using unnecessary consultants and assistants for surgical cases and ordering duplicative laboratory tests to diagnose myocardial infarctions. Inefficiency also exists in the treatment of medical conditions with an inefficient mix of services, such as performing surgery for a cardiac condition that could be treated medically with a better or equal outcome or treating a case of influenza that could have been prevented with prior immunization.

Technological Change

Since Medicare pays 17 percent of the income of physicians as a group and as much as 35 percent for some specialties, such as thoracic surgery (353), that care primarily for elderly people, how Medicare pays for physician services and associated medical care can exert substantial leverage over prices and uses of medical technologies throughout society. The adoption of Medicare's payment methods by other payers reinforces these direct effects. Through its influence on the market for medical care, Medicare in turn shapes the market for medical devices and other technologies and affects the direction and extent of medical innovation (487).

Until recent changes in Federal and State payment for inpatients, payment policies encouraged manufacturers to develop and market sophisticated products that increased quality of care and that were directed to acute hospital care. Technological development has slighted cost-saving devices, since potential purchasers had little incentive to adopt them, and preventive and rehabilitative devices, which have been much less likely to be covered by Medicare and other insurance.

With the greater payment limitations on inpatient care and clinical laboratories, market incentives are now fostering the development of devices for ambulatory settings, especially for physicians' offices. State certificate-of-need laws, which regulate the purchase of expensive equipment and construction of facilities, contain similar incentives since they have applied to hospitals and certain other facilities, such as dialysis centers, but rarely to physicians' offices. As of April 1985, only 13 States and the District of Columbia had certificate-of-need laws that applied to some or all major equipment acquired by nonhospital ambulatory care facilities and one State (Maryland) required that costly technologies in all settings be licensed (11).[1]

Administrative Feasibility

Although all of the physician payment alternatives considered in this report are feasible to administer, they all require some changes in administration, especially for the Medicare contractor or carrier (see app. D). These changes range from different methods of determining Medicare's approved charges and different coding procedures to negotiating with providers and assuming financial risk for utilization. Consideration of these differences will highlight changes necessary to implement the alternatives.

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[1] The 13 States are Colorado, Connecticut, Iowa, Missouri, Montana, New Hampshire, North Dakota, Rhode Island, Utah, Virginia, West Virginia, Wisconsin, and Wyoming (11).

SPECIFIC MEDICAL TECHNOLOGIES FOR SUBSEQUENT ANALYSIS

In order to provide some concrete examples of the way in which different physician payment methods might affect medical technologies, subsequent chapters on specific payment alternatives will consider the implications of payment reform on five technologies:

- pneumococcal vaccination,
- clinical laboratory testing,
- cataract surgery,
- magnetic resonance imaging (MRI), and
- extracorporeal shock wave lithotripsy (ESWL).

These five examples can illustrate potential payment effects on a diverse set of technologies. Pneumococcal vaccination is a preventive technology that is low in cost and underused by the Medicare population (485). Clinical laboratory testing is a diagnostic technology, consisting of many high volume, relatively low-cost procedures. Cataract surgery is a well-established therapeutic technology also performed at high volume on Medicare patients. Finally, MRI and ESWL are diagnostic and therapeutic technologies, respectively, that are new, expensive to purchase, and undergoing rapid technological change. All five technologies can be provided in more than one setting: hospital outpatient departments, inpatient settings, freestanding ambulatory facilities, or physicians' offices. Thus, these examples can illustrate the ways in which alternative physician payment methods might affect the site of care.

Pneumococcal Vaccination

The vaccine to protect against pneumococcal pneumomia, which represents about 14 percent of all pneumonias, is the only preventive technology that is part of Medicare's benefits for all beneficiaries. Covered by Medicare since July 1, 1981 (Public Law 96-611), the vaccine is indicated for use among persons with certain chronic illnesses, who are at a higher than average risk of contracting pneumococcal infection. The Centers for Disease Control's Immunization Practices Advisory Committee also recommends that all older persons, particularly those over age 65, receive the vaccine even if they are otherwise healthy (386). Nevertheless, estimates based on vaccine sales and physician surveys suggest that only 10 to 25 percent of elderly people have been vaccinated (397, 485).

Pneumococcal vaccination is a relatively stable technology. Since its approval by the Food and Drug Administration (FDA) in 1977, the vaccine has undergone one major change: In 1983, FDA approved a vaccine with capsular polysaccharides of 23 of the 83 pneumococcal types, an increase from the previous vaccine with 14 types (545). The 23-valent vaccine provides coverage against types that cause 90 percent of pneumococcal bacteremia and is marketed by two manufacturers (485). A single injection probably provides effective coverage for at least 3 to 8 years in elderly adults (485).

The vaccine is an inexpensive technology as well, though the average Medicare allowed charge is probably lower than the average physician's charge for administering a dose. The average charge per dose was estimated at $11.37 in 1978, $4.90 for the vaccine and $6.47 for the physician's fee to administer it (485). In 1983, the average price for the vaccine had actually decreased to $4.43. If physicians' charges had increased at the same rate as the Consumer Price Index over those 5 years (57.9 percent), the average physician's injection fee would have increased to $10.22. Total average charge for the vaccine in 1983 was therefore approximately $14.65 per person. Medicare approved charges vary by carrier and geographic region; in 1985, the approved charges of four carriers ranged from $7.00 to $11.10 (397), which assumes a low approved charge for injection. One Florida Medicare carrier, for example, reimbursed for pneumococcal vaccination at a rate of $5.50 for the vaccine itself plus $2.00 for the injection fee (105).

It has been estimated that pneumococcal vaccination for a person age 65 or older could provide on average an additional 0.5 day of healthy life for about $8.00, or a rate of about $6,000 to gain a year of healthy life (485). The cost to the Medicare program was higher, estimated at about $8,000 per year of healthy life gained because Medicare does not pay for the total medical expenditures of program beneficiaries and therefore reaps only part of the savings in treatment costs due to a reduction in pneumococcal pneumonia.

Medicare pays 100 percent of the allowed charge for pneumococcal vaccination; beneficiaries are liable for neither deductible nor coinsurance. They are, however, liable for any charges in excess of the allowed charge if the physician does not accept assignment. Since pneumococcal vaccination is a Part B service, hospitals can bill Medicare for the vaccine separately from inpatient facility services, which are paid according to DRGs (485).

The use of preventive technologies for adults, such as pneumococcal vaccination, has characteristically been low, even among the patients of physicians who support their use (363). Neither adults nor the clinicians who care for them have been attuned to prevention in the way that parents and pediatricians have been for children. Although the extent to which financial incentives can affect physicians' decisions to use preventive technologies including vaccines is unknown, pneumococcal vaccination has faced special barriers. Uncertainty surrounded efficacy when the vaccine was first marketed in 1978. Although the Immunization Practices Advisory Committee strengthened its recommendations in 1984, the initial situation may have discouraged clinicians from recommending its use. In addition, people are unlikely to feel threatened by pneumococcal pneumonia because public awareness of the disease is low. Nor is it clear that clinicians perceive that elderly people are at higher risk from the disease (485).

In September 1985, the Health Care Financing Administration awarded two demonstration projects to organizations that will offer packages of preventive services to Medicare beneficiaries and assess the cost-effectiveness of these services over a 6-year period. Payment for the package is limited to $100 per year. The package to be offered by the University of North Carolina includes both pneumococcal and influenza vaccinations (441).

Clinical Laboratory Testing

Clinical laboratory testing is of interest because it is an example of a technology that has low per-unit but high aggregate costs (145) and may at times be overused or inappropriately used. In addition, it is a technology that is undergoing rapid and significant change.

Laboratory tests are ordered by physicians for a wide variety of reasons. Test results may be used to assist in diagnosis, as with fecal tests to detect colon cancer; to establish clinical baseline values, as with tests of blood components; to monitor therapy, as with tests for drug levels in the blood that can indicate whether a patient is adhering to a prescribed drug regimen; or simply to reassure patients that a disease is absent or under control. An increase in "defensive medicine" may also play a role in physicians' decisions to order tests (284). Total revenues for clinical testing services in the United States have been estimated at $20 billion, making it a highly important component of the health care market (159).

Most clinical laboratories today are highly automated, and current technological trends are to make them more so. The increasing automation combined with smaller equipment and a variety of diagnostic test kits has made the performance of most routine tests practical for group practices and even for individual physicians' offices. Advances in biotechnology have supported rapid change in testing methods through the use of monoclonal antibodies and other technologies to enable rapid, simple, and accurate in vitro diagnostic testing (484), and more dramatic changes are imminent.

Historically, most testing has been done in hospitals, and about half of it still is (159). Independent and reference laboratories perform about a quarter of clinical tests. The most significant change in site of testing, however, is the return toward testing in physicians' offices, which accounts for the remaining 25 percent of clinical laboratory tests. Approximately 50 to 60 percent of all office-based physicians conduct some clinical laboratory tests in their offices, drawing approximately $5 billion in clinical testing revenues (159). Many of these physicians are in group practices, a target market for new technologies such as a recently developed blood analyzer (114). Some tests, such as those that indicate the possible presence of colon cancer or diabetes, have even been developed for home use by patients.

Payment for clinical laboratory testing has been as dynamic an area as changes in the technology. Before July 1984, physicians could bill Medicare for the laboratory services they ordered, regardless of whether the tests were actually performed in the physician's office or in an outside laboratory (332). If a physician's claim indicated that the test was performed in the physician's office, Medicare paid physicians 80 percent of the reasonable charge (less any beneficiary deductible) (487). If the test was performed outside the physician's office, Medicare would pay the physician laboratory's approved charge plus a $3 handling fee. The physician would then pay the laboratory. If the physician did not accept assignment, the beneficiary in either case would be liable for all physician charges above the Medicare reasonable charge. Thus, the total payment to the physician for the test could be considerably higher than the laboratory's charge. Under this system, the physician might reap a financial reward for ordering the test even though it was actually performed elsewhere.

Photo credit: American College of Physicians, HEALTHSCOPE film series

Some devices for clinical laboratory testing, such as this blood glucose monitor for diabetic patients, have been developed for home use.

More recent changes in the law have eliminated this financial reward to physicians who act as intermediaries, increasing the incentives for physicians to perform tests themselves (487). The Deficit Reduction Act of 1984 (Public Law 98-369) prohibited physicians from billing for laboratory services unless they are performed in a physician's office. It also established Medicare maximum payment levels for laboratory services, for a 3-year period beginning in 1984, at a fixed percent of the prevailing fee levels for each service (60 percent for physicians' offices, independent laboratories, and hospital laboratories serving nonhospital patients; 62 percent for hospital laboratory services to hospital outpatients). These fee levels are adjusted annually according to the Consumer Price Index; the maximum increase in payments for laboratory services provided from July 1985 through June 1986 has been set at 4.1 percent (351). In 1987, a national fee schedule, presumably based on a method other than prevailing charge levels, will be developed for tests performed in physicians' offices and independent laboratories (487). Hospital laboratories, however, will revert to cost-based payment (as before 1984) unless an alternative payment mechanism is devised.

The Deficit Reduction Act also changed arrangements regarding assignment for tests in physician's offices and independent laboratories. Independent laboratories and hospital laboratories serving outpatients must accept assignment, but Medicare will pay 100 percent of the fee schedule, thereby waiving coinsurance and deductible requirements for tests in these settings. Physicians who conduct their own tests may choose to accept or decline assignment, but if they accept, Medicare will again pay 100 percent of the fee schedule, waiving coinsurance and deductible. If they decline assignment, of course, the beneficiary is liable for both the deductible and a coinsurance equal to 20 percent of the Medicare-approved rate for the tests, plus any excess about the fee schedule amount. If the physician does not actually perform the test, Medicare payment to the physician is limited to a maximum payment of $3 for specimen collection, handling, and test interpretation.

Hospital laboratory services to nonhospital patients are considered to be identical to independent laboratory services, and assignment is mandatory. For services to the hospital's own outpatients, the hospital is constrained by its Medicare provider agreement to accept Medicare payment as payment in full, effectively mandating "assignment" in these cases as well. In both cases, Medicare pays 100 percent of the fee schedule rate, so no beneficiary deductible or coinsurance is necessary (88).

Cataract Surgery

As one of the most frequent surgical procedures performed on the elderly (69,468), the removal of cataracts—a clouding of the lens of the eye—receives considerable attention from the Medicare program. The practice of cataract surgery has undergone major changes in the past few years. Once a major hospital procedure that involved a long stay and post-surgical vision correction with heavy spectacles, cataract removal is now a delicate but streamlined procedure that is commonly performed on ambulatory patients (161). In about 85 percent of cases, it now also includes the implantation of a prosthetic intraocular lens (IOL) to replace the natural one extracted from the eye (385). By comparison, in 1980 fewer than half of cataract extractions included an implantable lens (385).

Medicare is the foremost payer of cataract surgery; persons over 65, most of whom are covered by Medicare, account for nearly 83 percent of inpatient cataract extractions (69). Concern has been expressed that in a few cases, this procedure is performed unnecessarily in patients whose cataracts did not yet impede their everyday activities (479).

Cataract surgery is a particularly interesting procedure because of the wide variety of settings in which it can be performed under Medicare. These include hospital inpatient settings, hospital outpatient departments,[2] ambulatory surgical centers (ASCs), and other ambulatory settings not certified by Medicare as ASCs. (These settings are often referred to for Medicare purposes as "physicians' offices," although they may look nothing like the traditional office of a physician in solo practice.) Table 3-1 summarizes Medicare reimbursement for cataract surgery in various settings.

Reimbursement for costs associated with cataract surgery fall into three categories. First are the facility costs, which include surgical equipment, routine medical supplies, and nonphysician staff. Second are the professional costs for ophthalmic surgeons and surgical assistants. Third is the cost of the IOL, which is reimbursed as a prosthetic device. In certified ambulatory settings, these three components are reimbursed separately under Part B. For hospital inpatients, the facility and IOL costs are reimbursed under the Part A DRG rate; only professional fees are reimbursed under Part B. In noncertified ambulatory settings, Medicare Part B pays the approved portion of the physicians' professional charge and the charge for the IOL. Medicare will not make any additional payment for the technical (facility and equipment) charges of physicians performing cataract surgery in this setting.[3]

Medicare hospital payment incentives and utilization controls have encouraged the trend toward ambulatory rather than inpatient cataract surgery. Hospitals are now paid a fixed rate for all services associated with the procedure when it is performed on inpatients, giving hospitals an incentive in many cases to provide it to ambulatory patients instead, for whom costs in most

Table 3-1.—Medicare Payment and Beneficiary Liability for Cataract Surgery With Intraocular Lens (IOL) Implantation in Four Sites of Care

	Site of care			
Medicare payment	Hospital inpatient	Hospital outpatient[a]	Ambulatory surgical center	Other ambulatory
Facility payment	100% DRG rate	80% reasonable cost	100%[b] class 4 rate	0
Physician payment[c]	80% approved charge	100% approved charge	100% approved charge	80% approved charge
Intraocular lens (IOL) payment	Included in DRG rate	80% approved charge	80% approved charge	0
Beneficiary liability[c]	20% physician's charge	20% facility cost + 20% IOL charge	20% IOL charge	20% physician's charge + 20% IOL charge

[a] Except for those hospital outpatient departments that have chosen to be certified as ambulatory surgical centers.
[b] 150% if intraocular lens implanted.
[c] If physician accepts assignment. If not, beneficiary is liable for all charges over Medicare's approved charge.
SOURCE: 47 FR 34082; 47 FR 34099.

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[2] Hospital outpatient departments can choose if they wish to be certified and treated for payment purposes as ambulatory surgical centers (ASCs). However, once this choice is made the outpatient department is subject to all of the constraints and payment methods imposed on ASCs (47 FR 34082).

[3] Medicare will pay a technical fee to the physician only for certain services, such as radiology, that are "incident to" treatment and have high equipment costs (202).

cases are still reimbursed as incurred. Inpatient cataract surgery is also being monitored by many utilization and quality control peer review organizations, the prospective payment system's utilization control mechanism, which is intended to prevent hospital admissions of low-risk cataract patients that would otherwise be profitable for the hospital.

Unlike hospital outpatient departments, which are paid according to their costs, ASCs are paid according to a fixed rate schedule (47 FR 34082). The facility cost portion of the cataract surgery procedure in an ASC is reimbursed at a single per-case (class 4)[4] rate under Medicare Part B. Beneficiaries receiving cataract surgery services in this setting are subject to neither deductibles nor copayments.

At present, Medicare physician payment incentives for cataract surgery also tend to reinforce the trend toward ambulatory surgery. Since beneficiaries who undergo cataract surgery in hospital outpatient or freestanding ambulatory surgical settings are not liable for any copayment (47 FR 34082), physicians who accept Medicare assignment have a more assured reimbursement if they perform the procedure in these settings.

Beneficiaries probably pay the least when they undergo cataract surgery performed in certified ASCs by physicians accepting assignment; in this setting beneficiaries are liable only for a portion of the charge for the IOL. In all other settings, beneficiaries are responsible for the Medicare Part B deductible and at least a 20-percent coinsurance of the physician's charge (in hospital inpatient and noncertified ambulatory settings) or the facility and IOL costs (in non-ASC hospital outpatient sites).

Magnetic Resonance Imaging (MRI)

MRI has gained attention as a potentially powerful new tool to complement the current diagnostic imaging armamentarium. Two characteristics make it particularly attractive. First, it uses electromagnetic fields instead of ionizing radiation to produce images, so it lacks the ionizing radiation dangers of traditional X-ray and X-ray computed tomography (CT) scanning. Second, MR images are not distorted by signals from bone, a problem with conventional X-rays. But the powerful magnets that make MRI a novel and promising technology come at great expense. The cost of MRI, the logistical problems involved in providing it, and the uncertainty about the scope of its future applications have acted to slow its diffusion (234,449).

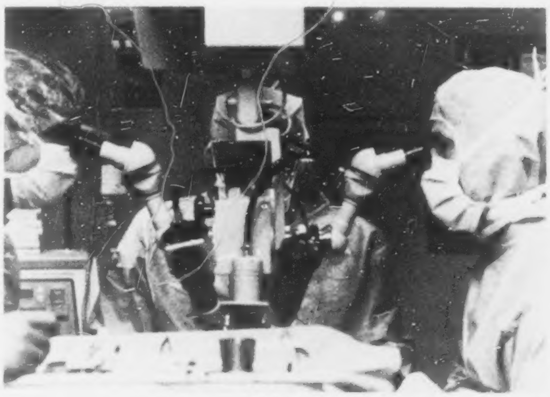

Photo credit: Georgetown Medical Bulletin

Medicare payment incentives reinforce the trend for cataract surgery, shown here, to be performed in ambulatory settings.

Although MRI holds tremendous potential to advance diagnostic science and to replace other riskier modalities, it is largely unclear what the clinical role of MR imaging will or ought to be (234). At present, there are special indications for MRI only for anatomic areas that have never been adequately imaged by conventional modalities. For example, MRI is the modality of choice for scans of the posterior fossa region of the skull and the cervical spine and is a promising modality for imaging the pelvis, where the absence of ionizing radiation is particularly important (234). In the near future, most clinicians are likely to view MRI as a complement rather than as a substitute for X-ray CT or other diagnostic technologies.

It is possible for the use of MRI to skyrocket as its uses become better defined. The central nervous system, as the most heavily explored area to date, offers the greatest potential for extensive

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[4] Class 4 has the highest payment level of the four ASC rate categories. If the cataract extraction includes implantation of an IOL, the ASC received 150 percent of the class 4 rate.

MRI use. Some researchers already consider MRI the modality of choice for initial screening of suspected brain disease. MRI's well-documented ability to delineate the plaques of multiple sclerosis may lead to its use for nonspecific complaints, mostly for patients younger than most Medicare beneficiaries. If MR technology improves as expected in cardiac and tumor imaging, the potential for widespread applicability in a Medicare population would also grow. At present, however, much of the clinical experiences is anecdotal, not from controlled trials (234).

MRI at this point in its development is a classic case of diagnostic methods' outstripping therapeutic options. Obtaining a definitive diagnosis may be a desirable outcome in itself, but therapeutic limitations may make it unlikely that diagnosis will change the course of a patient's illness. For cerebellar and brainstem infarctions, for example, which by virtue of their location in the posterior fossa offer indications for MRI, little can currently be done to alter the prognosis for most patients (234). MRI has the potential to be useful in certain diseases such as some tumors for which treatments have been more successful, and greater knowledge about disease processes may ultimately lead to therapeutic advances. However, because the value of MRI in altering therapy or improving quality of care has not been adequately studied, it is difficult to ascribe an appropriate position for MRI in the provision of good quality medical care (234).

Another major source of uncertainty to MRI purchasers concerns technical developments (449). Prospective buyers must choose among MRI systems with different types of magnets (resistive, permanent, and superconducting) and different magnet strengths, and considerable debate surrounds the relative efficacy and cost effectiveness of the different systems. The costs of equipment and site preparation range from about $1.7 million to $2.4 million, depending on the type and field strength of the magnet (447). An additional complicating factor is that magnetic resonance is also used to perform MR spectroscopy, which indicates relative concentrations of different compounds in tissues or organs. MR spectroscopy requires high field strengths and, although it has great promise, it is still in a research phase and its clinical importance is unclear (449). Providers do not want to purchase an unnecessarily expensive imager, but neither do they want to purchase a (still costly) less expensive device that will be outmoded in a few years. Nonetheless, a variety of physicians, including radiologists, neurosurgeons, neurologists, and cardiologists, envisage MRI as an important future component of their practice and are learning to perform it (234).

Governmental policies have most likely slowed the diffusion of MRI and affected its distribution. By the end of 1984, 4 years after MRI's introduction into the United States, 108 MRI units were installed in the United States, 39 percent in ambulatory settings (449). MRI diffusion has been occurring during a period when payment for inpatient services has been undergoing great change. Medicare's payment of operating expenses by DRGs has constrained its payments to hospitals and given hospitals a financial disincentive to use technologies such as MRI that are likely to increase the cost of caring for patients. Although capital expenses connected with the purchase and installation of equipment have continued to be paid on a cost-reimbursement basis, approaches are being developed to include capital in the prospective payment system. In addition, as mentioned above, State certificate-of-need laws for the most part apply to hospitals but not to ambulatory sites, such as physicians' offices or ambulatory diagnostic imaging centers. Since both payment and planning policies constrain hospitals much more than ambulatory settings, the predictable result is an increased tendency to install expensive new technologies such as MRI outside of hospitals. It is noteworthy that after a comparable period of diffusion in the United States, 18 percent of X-ray CT scanners v. 39 percent of MRI units were in nonhospital settings (449).

Total charges for MRI scans, consisting of a technical (facility) fee and a professional (physician) fee, have ranged from $450 to $1,000 (234). There is virtually no Medicare experience in paying for MRI. HCFA has approved paying for the use of MRI for certain purposes only since November 22, 1985 (20), although a few Medicare carriers apparently chose to accept MRI claims before this date (234). At present, the use of MRI does not increase payment to ASCs or to hospitals using it to diagnose inpatients.[5] HCFA is developing guidelines for carriers regarding paying physicians a technical as well as a professional fee for MRI performed in nonhospital settings (55).

Eighty percent of the top 30 commercial insurance companies were paying for MRI services on a routine or case-by-case basis in January 1985 (234), but only 20 percent of the 70 Blue Cross-Blue Shield plans were paying for MRI in July 1985 (210).

Extracorporeal Shock Wave Lithotripsy (ESWL)

Like MRI, ESWL is a new and expensive procedure that has excited considerable interest. Unlike MRI, its costs and applications are relatively simple to define. It has only recently been approved as a reimbursable procedure by Medicare (301), and most carriers do not yet have any experience paying for it. Its cost-saving potential, however, has made most payers—including Medicare—eager to include it as a covered service.

ESWL uses shock waves produced outside the body to disintegrate kidney and other upper urinary stones, eliminating the need for traditional open surgery in most cases (18). The current model of the device used for ESWL is large and expensive to purchase and requires its own facility. Nevertheless, if used by enough patients (over 1,000 per year), it results in a per-patient treatment cost considerably lower than that for open surgery, primarily because it requires a very short hospital stay (18). Some centers even offer ESWL to ambulatory patients.

Because of anticipated lower costs per treatment, ESWL promises to be a profitable technology for those hospitals that provide it, particularly if these cases are reimbursed at the same rate as open surgery. However, the high fixed costs of the extracorporeal lithotripter (about $2 million for purchase and installation of the current model) make it less expensive than the alternatives only at high volumes of use. Because the number of kidney stone patients is limited, it is probable that more devices will become available than are justified strictly by the number of patients who would have undergone stone surgery otherwise. If this is the case, the eligibility criteria for ESWL might be expanded to include many patients with less serious stones in addition to those otherwise eligible for surgery, leading to an increase in demand for the service (431). In the future, the technology itself may be applied to patients with lower urinary stones and gallstones, but the present device is not approved by the Food and Drug Administration for these purposes (379).

Medicare reimbursement for ESWL is similar in structure to that for surgery. Medicare's share of the capital costs of its purchase and installation are reimbursed at cost through Medicare Part A, though it is possible that these costs will be incorporated in the DRG rate in the future. The hospital's costs of operating the device and of caring for lithotripsy patients are reimbursed (also under Part A) at the rate of the applicable DRG (#323 or #324 if no adjunct surgical procedures are performed). Physicians' charges for performing the procedure, of course, are reimbursed under Part B.

ESWL technology is undergoing rapid change. Although only one manufacturer, Donnier Systems, currently has approval from the Food and Drug Administration to market the device, a number of other companies are developing competetive devices. Medicare's per-case hospital payment system, which presently pays for ESWL at a DRG rate that is much lower than the rate for open surgery for kidney stones, makes these alternatives highly promising and has probably helped stimulate their development. Only a few hospitals can provide extracorporeal lithotripsy; fewer than 60 devices will be in place in the United States by the end of 1985 (378). A few nonhospital ambulatory centers are providing ESWL, but it is not an approved procedure in ASCs, and Medicare will not pay for its facility-related costs in this setting.

Other alternatives to open surgery besides ESWL are also expanding rapidly. Endoscopic procedures that can withdraw kidney stones through a narrow tract, rather than a large incision, are proliferating simultaneously with ESWL. Like traditional surgery, these procedures require a surgical suite and require specialized endoscopic instruments costing up to $50,000 as well (3).

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[5] At present, the use of MRI itself does not increase Medicare payment to a hospital, even though use of MRI for a patient may increase that hospital's costs. A possible alternative form of payment for MRI, which has been recommended in principle by the Prospective Payment Assessment Commission, is a budget-neutral DRG add-on for cases in which MRI is used.

A major issue at present is what and how physicians should be paid for ESWL. More specifically, payers are questioning whether physicians should be paid the same for performing ESWL as for the open surgery it replaces, since ESWL requires additional training on the part of practicing physicians but appears to take less time to perform (18,431). The few carriers thus far with any ESWL reimbursement experience are reimbursing the procedure at rates ranging from approximately $1,200 to $2,000, at or slightly lower than the surgical rate. In most cases, the rates were based on consultations with outside urology experts and negotiations with the respective lithotripsy centers (431). HCFA is developing guidelines to help carriers establish an approved charge for the service (431).

For the most part, kidney stone surgery, like most other surgical services, is reimbursed as a package that includes some preoperative and postoperative care by the urologist. Under the present system, an effort to reimburse for lithotripsy at a lower rate might stimulate some "unbundling," or redefinition of the service that results in physicians' billing for the procedure separately from some of the preoperative or postoperative visits now included in a single bill. Conversely, if ESWL is reimbursed at the same rate as major surgery, the physicians who perform it will reap a considerable profit. The existence of ESWL in a few regional centers, if it continues, could result in some form of price level negotiations between carriers and urologists performing ESWL, regardless of the structure of physician payment (431).

Chapter 4

Modifications to Customary, Prevailing, and Reasonable Charge Payment

> What's past is prologue.
>
> —*William Shakespeare, The Tempest*

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Chapter 4

Modification to Customary, Prevailing, and Reasonable Charge Payment

INTRODUCTION

This chapter examines possible changes to Medicare's customary, prevailing, and reasonable (CPR) charge method[1] of paying physicians that would continue the historical pattern under CPR of computing distinct charges for individual physicians. Most of the modifications are intended to constrain the rate of growth of expenditures for physician services.[2] Some of the changes identified could also reduce the substantial variation in Medicare payment rates for selected services. As noted in chapter 2, the variations in Medicare payment rates for some services suggest possible inequities in the distribution of benefits and inefficiences in the program.

From the start, Medicare's CPR payment system has included several features intended to limit program expenditures for physician services. One such feature is a restriction on the amount that Medicare pays for physician services. Medicare's approved charge[3] for a physician's service is the *lowest* of the physician's billed (or actual) charge, the physician's customary charge, or the prevailing charge in a locality. Indeed, in fiscal year 1984, Medicare-determined approved charges were, on average, 24 percent lower than physicians' billed charges (69). A second feature of Medicare's original payment system intended to limit program expenditures is the requirement that beneficiaries assume responsibility for a portion of physicians' approved charges, namely, by paying a deductible and coinsurance. A third feature of Medicare's original payment system that has cost-containment attributes is assignment. Medicare expenditures are not directly affected by assignment, but by accepting assignment, physicians are in fact accepting a reduction in the payment for any service for which their billed charge exceeds Medicare's approved charge.

Medicare has made further attempts to constrain program expenditures by amending CPR in various ways. Past approaches have included temporarily freezing all fees, as mandated by the Deficit Reduction Act of 1984 (Public Law 98-369); lowering the percentile at which all prevailing charges are set; and applying the Medicare Economic Index (MEI) to limit annual increases in all prevailing charges. Although Part B expenditures have risen despite these measures, they might have increased more if controls had not been imposed.

Medicare has not in the past attempted to moderate the growth in program expenditures or to redress perceived imbalances in relative payments by reducing differentials in payment rates for selected services. As noted in chapter 2, Medicare payment rates tend to be higher for procedural and inpatient services than for nonprocedural and ambulatory services, reflecting the program's benefit package that emphasizes high-cost acute and inpatient care. The rates also tend to be higher for specialist and urban services than for generalist and rural services in order to reflect local differences in physicians' fees.

Another untried approach in reducing the rate of growth in program expenditures is for Medicare to give beneficiaries the option of receiving care from preferred provider organizations (PPOs). Medicare could take advantage of the increasingly competitive market and contract, either directly or through carriers or other entities, with only those physicians or groups of physicians who would agree to accept Medicare payments below the level of approved charges as payment in full.

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[1] The CPR method, the principal method that Medicare uses to pay physicians, is described in app. C along with other facets of Medicare's physician payment process.

[2] The chapter considers controlling Medicare's expenditures for physician services by controlling Medicare's payment to physicians and does not consider other means, such as revising beneficiary payments.

[3] Under Medicare, reasonable charges, approved charges, and allowed charges are synonymous terms. Approved charges will be the term used in this chapter.

This chapter explores, in the context of today's conditions, variations of the CPR method previously or currently used by Medicare to restrain program expenditures for physician services. It also analyzes the potential for controlling program expenditures and modifying perceived imbalances in Medicare payment rates for services that vary by type, site, specialty, and geographic location. Negotiated or discounted fees are also considered as a cost-containment approach.

IMPLICATIONS OF ALTERNATIVE METHODS OF MODIFYING CPR

Under CPR, the rate of growth in Medicare expenditures for physician services could theoretically be restrained by controlling approved charges for all or selected services (see table 4-1). Approved charges could be controlled by changing the manner of updating prevailing or customary charges, for example, by freezing them.[4] Approved charges could also be controlled by lowering the percentile for calculating prevailing charges, which is now at the 75th percentile of customary charges.[5]

Under both methods, assignment (physicians' acceptance of Medicare's approved charges as payment in full) could be voluntary or mandatory, and mandatory assignment could apply to some or all services.[6]

The implications of controlling Medicare approved charges for all services and for selected services are evaluated below with respect to dimensions indicative of the performance of the health care system: cost and efficiency, quality of care, access, technological change, and administrative feasibility.

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[4] A freeze on physician charges is but one way of changing the manner of updating charges. Other ways include changing the frequency of updating customary or prevailing charges and capping prevailing charges.

[5] Another method of controlling the rate of growth in Medicare expenditures would be to reform Medicare's coding system, which encourages physicians to bill separately for each activity undertaken in the care of the patient and may stimulate coding for more complex services. Coding problems are found in all fee-for-service methods, and the issue is discussed in ch. 6. In addition, the possibility of imposing an aggregate expenditure cap is discussed in connection with fee schedules in ch. 5.

[6] The analysis that follows assumes the retention of voluntary assignment unless otherwise mentioned.

Table 4-1.—Methods for Modifying CPR Payment Intended To Control Medicare Expenditures or To Reduce Variations in Reimbursement for Services

Scope of change	Change manner of updating prevailing and/or customary charges (e.g., by freezing)	Change percentile for calculating prevailing charges
All services[a]	1. Freeze prevailing and/or customary charges for all services	1. Lower percentile for calculating prevailing charges for all services
Selected services	2. Freeze prevailing and/or customary charges for selected services such as: • procedural, • inpatient, • specialist, and • urban	2. Lower percentile for calculating prevailing charges for selected services, such as: • procedural, • inpatient, • specialist, and • urban
	3. Freeze prevailing and/or customary charges for selected services such as: • procedural, • inpatient, • specialist, and • urban and increase[b] prevailing and/or customary charges for other services, such as: • nonprocedural, • ambulatory, • generalist, and • rural	3. Lower percentile for calculating prevailing charges for selected services, such as: • procedural, • inpatient, • specialist, and • urban and raise the percentile for calculating the prevailing charge for other services, such as: • nonprocedural, • ambulatory, • generalist, and • rural

[a] Modifications that affect all charges for services will not reduce variations in charges between services.

[b] Such selective increases can be accomplished by an add-on to frozen charge screens.

SOURCE: Office of Technology Assessment, 1985.

The implications of controlling approved charges for selected services are also examined with respect to redressing perceived payment imbalances by type of service, by site of treatment, by physician specialty, and by geographic location (see table 4-1). Controlling Medicare payments for selected services by reducing the variation in approved charges among them could also pertain to constructing a fee schedule (see ch. 5). Indeed, conversion to a fee schedule would afford an opportunity to make any corrections in relative approved charges.

None of the modifications to CPR payment discussed in this chapter would change the financial incentives that CPR gives physicians to provide additional services to generate income. In deciding whether or not to provide a service, physicians would be likely to respond to changes in payment level or in relative payment rates. Moreover, any decrease in the growth of Medicare expenditures would be of short duration. CPR payment per se and the modifications discussed in this chapter encourage physicians who respond to financial incentives to raise their billed charges to beneficiaries, since such increases are later reflected in Medicare's approved charges.

A confounding factor in examining the effects of controlling approved charges on costs and other dimensions is the uncertainty surrounding the relationship between lower payment rates and changes in the volume of services beneficiaries receive (see ch. 2). How physicians and beneficiaries would respond to lowered approved charges is uncertain. As suppliers of services, physicians would be expected to react to lower payment rates by providing fewer services. But physicians also exert control over services used and might seek to maintain their incomes by providing or billing for additional or more highly priced services.

Lowering approved charges would lower beneficiary coinsurance payments, and if out-of-pocket expenses fell as a result, beneficiaries would be expected to seek more care. But if assignment continued to be voluntary, increases in beneficiaries' out-of-pocket expenses for unassigned liability would most likely exceed reductions in coinsurance. The decrease in beneficiary coinsurance would apply to only 20 percent of the reduction in approved charges. Thus, if Medicare reduced the approved charge for a service from $100 to $80, coinsurance would be reduced from $20 to $16 (i.e., 20 percent of the $20 reduction). If a physician refused to take assignment with the lower approved charge, he or she might continue to bill the beneficiary $100. Beneficiary unassigned liability would then be $20. Despite the $4 decrease in coinsurance, total out-of-pocket costs for the beneficiary would increase to $36. Only if the physician billed between $81 and $85 would the decrease in cost-sharing be more than the increase in unassigned liability. Thus, beneficiary out-of-pocket expenses might well increase with lower approved charges.

There is no theoretical or empirical evidence to indicate that physicians would increase their charges to non-Medicare patients if Medicare lowered approved charges for Medicare patients. Indeed, non-Medicare patients might not be willing to purchase physician services if fees to them were raised (188,357), particulary in an era of increasing physician supply. But physicians might shift their time and provision of services to non-Medicare patients, thus increasing non-Medicare aggregate expenditures.

Lowering approved charges would lower beneficiaries' financial access to care. Reducing the ratio of approved to billed charges has reduced assignment rates (158,184,315,357,394). The additional costs associated with seeing physicians who do not take assignment would diminish access to care. Access could also decline if, as a result of lower Medicare approved charges, physicians chose not to treat Medicare patients for certain services.

A decrease in the assignment rate could also indirectly affect quality by curtailing access. If access to appropriately used services, e.g., extracoporeal shock wave lithotripsy (ESWL) for certain renal stones, was reduced, quality could be lowered. On the other hand, if access to inappropriately used services, e.g., routine skull X-rays for minor injuries, was reduced, quality could be improved. In addition, lower approved charges could directly affect quality by influencing the actions of some physicians who take assignment. Physicians might include financial considerations in choosing and providing services where the medical and ethical decision is unclear (194). For example, some physicians might spend less time with Medicare beneficiaries and more time with patients for whom their time is more highly paid.

Controlling Approved Charges for All Services

A freeze on fees for physician services could be designed and implemented in a variety of ways. Variables include charges to be updated (e.g., the prevailing or the customary and the prevailing), the frequency of updating, and the method of updating. For example, customary and prevailing charges could be frozen for 2 years, and the updates could allow increases only in billed charges for the first year. There would also be discretion about the concept of participating physicians (see ch. 2). Although the specifics of a particular freezing method would influence its effects, the discussion below for the most part is confined to the general implications of a fee freeze.

Lowering the percentile for calculating prevailing charges could also be accomplished in a number of ways. One strategy would be to lower the current prevailing percentile and retain the current MEI. Another strategy, to lower the current prevailing percentile and eliminate the current MEI, would decrease provider and beneficiary confusion and moderate the uneven effects of the index on approved charges (see ch. 2).

Costs and Efficiency

As noted above, short-term savings to the Medicare program could theoretically be achieved by freezing charges for all services. But the empirical research on the U.S. and Quebec health care systems suggests that this approach has been ineffective in constraining the rate of growth in expenditures for physicians' services (158). These research findings are not conclusive, since an increase in the number and complexity of services billed may have masked the effects of constraining payment rates on expenditures. The mechanism driving these changes in service quantity and intensity is a matter of uncertainty and debate. Explanations put forward include physician-induced demand; patient-initiated demand; a shift from non-Medicare to Medicare patients; changes in physician opportunity costs; and changes in billing practices, such as billing for a more complex procedure than actually provided or billing separately for items customarily included under one procedure (see ch. 2) (28,158,259).

Simulations have examined the effect of the MEI on controlling approved charges and program costs (see Paringer in box 4-A). The data have to be extrapolated with caution, since the MEI "caps" payment and is only partially analogous to a freeze. The MEI, a looser form of control than a freeze, allows for inflation in the general economy and in physician practice costs. The index has had a decided effect on lowering the annual increase in the prevailing charge for some procedures. Nonetheless, a large percentage of the increase in Medicare program costs—47 percent from 1980 to 1983—was due to higher prices for individual services (70).

The effect of the physician fee freeze enacted under the Deficit Reduction Act of 1984 on Medicare costs and other dimensions of beneficiaries' health care has yet to be measured and reported. Preliminary evidence shows a reduction in the rate of growth in expenditures per beneficiary for physician services for fiscal year 1984 (84). These data might reflect changes in the health field, such as changes in Medicare's payment methods for hospital services or an increasing competitive environment. Whether changes in market incentives resulting from an increased physician supply and from alternative organizational and delivery systems would favor decreases in approved charges and would be strong enough to overcome traditional patterns of physician practice is conjectural.

Lowering the percentile at which prevailing charges are calculated could produce short-term reductions in the growth of Medicare expenditures. If the prevailing percentile is lowered from the 75th to, for example, the 50th, Medicare expenditures for physician services would be reduced to the extent that approved charges are currently higher than the 50th percentile, assuming that the volume and complexity of services are not increased. The magnitude of the decrease in the rate of growth cannot be determined. To the extent, if any, that the volume of services in-

Box 4-A.—Cost Effects of the Medicare Economic Index

The Medicare Economic Index (MEI) is intended to restrain the rate of increase in physician payments by capping prevailing charges (see app. C). The operation of the MEI provides some insight into the effects of freezing physician fees and is also discussed in conjunction with lowering the percentile for calculating prevailing charges.

Capping prevailing charges by means of the MEI has had a decided effect on lowering the annual increase in the prevailing charge for some procedures. Using a model based on fiscal year 1984 prevailing charges, the Congressional Budget Office estimated that about 60 percent of Medicare's approved charges for physician services were at the adjusted prevailing charge ceiling in July 1984 (401,469). A lower estimate of 43 percent was derived from 1983 South Carolina claims data (247). (The calendar time of these two estimates overlap by a quarter of a year.) The South Carolina data also show that 65 percent of office and hospital visits and 30 percent of surgery were at the adjusted prevailing charge.

One study comparing California claims data from 1978 and 1980 found that the effect of the MEI increased over time, since physicians' fees increase at a faster rate than the MEI, and an increasing number of claims became subject to the prevailing charge limitation (360).

Although the MEI has restrained the growth in prevailing charges for some services, research is limited with respect to its effect on reducing Medicare expenditures. Paringer estimated the effect of the MEI on total Medicare expenditures in California for a short period—the first quarter of 1978 (358). The analysis asssumed no changes in the output or the mix of services. The MEI slightly reduced Medicare expenditures; the reduction was higher for surgical procedures than for others. At the same time, there was an increase in overall beneficiary liability. The increase in beneficiary liability for both assigned and unassigned claims was higher than the savings to the Medicare program.

The MEI's ability to cap the prevailing charges for some procedures does not directly translate into a decrease in the increase in total program expenditures based on Medicare program expenditures from 1973 to 1983 (see table 2-3 in ch. 2). Although the index has been in place since 1976, the year to year total increase in recognized charges per aged enrollee has increased in every year between 1970 and 1983, with two exceptions (553). In 1974, the increase was 8.9 percent; in 1978, 13.3 percent; in 1980, 16.0 percent; and in 1983 charges increased by 20.6 percent. About 12 percent of the increase in 1983 was due to the increased number and age of the beneficiaries, 41 percent to the increased volume and complexity of services, and 47 percent to higher prices for individual services (70).

It is even more difficult to discern the effects of the MEI on total Medicare expenditures after 1983 because of new, deep-seated changes in the Medicare program. The increase in Part B payments declined to 13 percent from October 1983 to June 1984 and to only 5.5 percent from July 1984 to March 1985 (242). Some experts consider part of the decline in the rate of increase of Part B payments to be the effect of the implementation of Medicare's prospective payment system for hospitals' inpatient operating costs in October 1983. Under prospective payment there has been an acceleration of an ongoing trend to decrease length of stay, a decline in the absolute number of hospital admissions, and a consequent reduction in the number of the services physicians are providing in the hospital setting. Furthermore, the physician fee freeze mandated by the Deficit Reduction Act of 1984 (Public Law 98-369), which was implemented in June 1984 may have had some effect although undocumented on total physician expeditures.

creased, the decrease in the growth of Medicare expenditures would be lessened.

In some cases, the magnitude of Medicare savings would be influenced by the MEI. For those procedures with indexed prevailing charges (the prevailing charge adjusted by the MEI) now at or above the 50th percentile, the MEI would have no effect on the amount of short-term savings. For procedures with indexed prevailings that are lower than the 50th percentile, maintaining the MEI after reducing the prevailing percentile to the 50th would protect short-term savings. There would be no additional savings for services for which the indexed prevailing is now below the 50th percentile. If the MEI was eliminated, however, short-term program savings would be less because of an increase in payments for procedures that had been capped below the 50th percentile by the MEI.

Even in the short term, establishing the prevailing at the 50th percentile would not decrease the prevailing charge for those procedures that have a very small spread of customary charges between the 50th and 75th percentile. In effect, the 50th and 75th percentiles of customary charges are the same for such services. Anecdotal evidence indicates that a small spread is typical of procedures that are controlled by a physician specialty, e.g., cardiac nuclear procedures (347), and of specific localities (521a).

Long-term savings produced by lowering the prevailing percentile to the 50th percentile are unlikely. Over time, an increase in billed charges would lead to increased prevailing charges, which in time could be as high as the indexed prevailing would have been.

Access and Quality

A decrease in assignment rates in response to lowered Medicare payment rates for all physician services would decrease beneficiary financial access to care. Access would also be negatively affected if physicians choose to provide a service only to non-Medicare patients. For example, the use of magnetic resonance imaging (MRI) and ESWL for Medicare beneficiaries would depend on the level of Medicare's approved charge. If physicians perceived the lower approved charge as providing insufficient net revenues, they could either refuse assignment or orient use to patients with private, higher paying insurance (234,431). An exception might be made in providing MRI for certain elderly patients with specific conditions that are the target of research protocols, but in that case, access would be sporadic. Decreasing access to ESWL could have cost implications for the Medicare program, because ESWL might be less costly than surgery for certain renal stone care (431).

There are effects on access and quality unique to the specifics of the freezing method. Physicians' reaction to a comprehensive freeze would depend both on the effect of the freeze on their real incomes and on the medical economic environment. The longer the freeze lasted, the greater the number of physicians who would be hurt financially and the greater the number of physicians who would be likely to refuse assignment.

A freeze on approved charges could also affect access and quality through the method of updating charges, the relationship of assignment to updating, and the extent of assignment. If physicians were required to accept assignment for all services during a freeze, fewer physicians would accept assignment during a freeze period than if assignment could also be accepted on a claim-by-claim basis.

If there was a participating physician component comparable to that of the freeze imposed by the Deficit Reduction Act of 1984 (see ch. 2), only nonparticipating physicians could refuse assignment during the freeze. However, future access could be decreased to the extent that participating physicians refused to renew their participation agreements. In a strongly competitive area, physicians might be more willing to accept assignment and renew participation agreements. The care provided by participating physicians might not change, because their charges will be updated at the end of the freeze. Unless the net revenues for discretionary services were generous at the onset of the freeze, the clinical decisions of nonparticipating physicians for such services taken on assignment might be affected.

Controlling Approved Charges for Selected Services

The variation in approved charges for selected services could be reduced by lowering approved charges for procedural, inpatient, specialist, and urban services (higher priced services) either with or without raising the approved charges of nonprocedural, ambulatory, generalist, and rural services (lower priced services). Both approaches could modify perceived imbalances in approved charges among such services.

Reducing the Variation in Approved Charges by Type and Site of Service

The concept of reducing the perceived disparity in approved charges between procedural and nonprocedural services is initially attractive in considering Medicare expenditures. Some evidence indicates disproportionate differences in the cost and the price of certain procedural services (46,227). When new technologies, in particular equipment-intensive and surgical procedures, are introduced, they are often priced at a high level (403,424,588). Initially, a high fee may be appropriate because the new procedure may require special skills and much professional time. Although experience and technological improvements over time often lower the level of expertise and amount of time needed to perform the procedure, initial payment levels are not reevaluated. In this regard, it would be informative to trace the evolution in prices over time for MRI and ESWL, which were both approved for Medicare coverage in 1985. The establishment and maintainence of high prices for services whose costs have declined over time is thought to have contributed to the wide differences in approved charges for procedural and nonprocedural services.

Medicare has also continued to provide more generous payment for inpatient services than for services in other sites. This policy has not kept pace with recent Medicare initiatives, e.g., increased coverage for home health services, that encourage out-of-hospital care. The comparability of inpatient and ambulatory services, particularly visits, is still undecided. A rationale for paying more for visits in a hospital than in an office is that the visits differ. Patients in hospitals tend to be sicker than ambulatory patients and require more physician attention. On the other hand, physicians do not pay overhead costs for treating patients in hospitals, although their time and transportation costs may be higher than when caring for patients in their offices.

Lowering approved charges for procedural services or inpatient services over which Medicare has market power could be an interim step in reducing the growth of Medicare expenditures or could be an independent modification of CPR. Medicare in 1983 had 74 percent or more of the market share for seven high-priced surgical procedures, including cataract surgery, and 40 percent or more of the market share for four high-volume diagnostic procedures (see table 2-12 in ch. 2) (69). Furthermore, the elderly accounted for anywhere between 26 and 37 percent of the performance of nine other surgical procedures and five other diagnostic and therapeutic procedures.

Costs and Efficiency.—The fact that approved charges for procedural services and inpatient services constitute a major part of Medicare's expenditures for physician services suggests that reducing such charges has the potential for restraining the overall rate of increase of Medicare expenditures. National data for 1981 indicate that considerably more than half of Medicare's approved charges for physician services nationwide are for procedural services and that almost 64 percent of these charges are for services provided in inpatient settings (see table 4-2).[7] If approved charges for inpatient medical care (primarily visits), which represent 20.6 percent of Medicare's approved charges for physician services (see table 4-3), and payment for all procedural services, which represent 48.2 percent of these charges (see table 4-2) were constrained, 68.8 percent of Medicare's approved charges would be affected.

How reducing approved charges for procedural and inpatient services would affect Medicare costs is not clear, in part because the effect of price on use of services is still a matter of debate.[8] If the

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[7] South Carolina 1983 Part B claims data suggest that an even higher percentage (66 percent) of approved charges are for procedural services (247).

[8] However, the relation of use to expenditures is clear from Medicare Part B data from 1975-1983. Figures on the contribution of increased volume per enrollee to the growth in approved charges for surgical, clinical laboratory, diagnostic, and X-ray services ranged from 39 to 44 percent; the increase in volume of services per enrollee for medical care (primarily office visits) was 22 percent (248).

Table 4-2.—Medicare Approved Charges and Assignment Rates for Physicians' Services, by Type and Place of Service, 1981

	Approved charges (in $000s)	Percent of approved charges	Assignment rate
Type of service:			
Nonprocedural services:			
Medical care	$ 4,517	40.2%	51.4%
Consultations[a]	381	3.4	59.7
Subtotal	4,898	43.6	
Procedural services:			
Surgery	$ 3,635	32.3%	47.6%
Diagnostic radiology	865	7.7	57.5
Diagnostic laboratory	834	7.4	48.1
Radiation therapy	151	1.3	62.3
Anesthesia	535	4.8	44.7
Assistant-at-surgery	196	1.7	48.1
Subtotal	6,216	48.2	
Other:			
Other medical services[b]	$ 127	1.2%	61.9%
Total for all services	$11,241	100.0%	50.5%
Place of service:			
Office	$ 3,203	28.5%	37.1%
Inpatient hospital	7,144	63.6	53.7
Outpatient hospital	532	4.8	68.7
Home	71	0.6	57.0
Independent laboratory	39	0.4	40.1
Skilled nursing facility[c]	150	1.3	83.2
Other	102	0.9	79.3
Total for all services	$11,241	100.0%	50.5%

[a] Consultations involve nonprocedural services primarily.

[b] Other medical services include the rental of durable medical equipment, the purchase of durable medical equipment, the use of ambulance services, and the rental and sale of internal and external prostheses and supplies.

[c] This category also includes physicians' services rendered in nonskilled nursing homes.

NOTE: Columns may not add to 100.0 percent due to rounding.

SOURCE: I. Burney and G. Schieber, "Medicare Physicians' Services: The Composition of Spending and Assignment Rates," *Health Care Financing Review*, forthcoming. The original table listed service by type of service without categorization as nonprocedural and procedural.

volume of services increased, lowering approved charges for procedural and inpatient services—with or without raising approved charges for nonprocedural and ambulatory services—could increase Medicare costs. If the volume of services did not increase, lowering approved charges for procedural and inpatient services could decrease the rate of growth in total Medicare expenditures.

If approved charges for nonprocedural and ambulatory services were raised simultaneously, the growth in Medicare expenditures would increase or decrease depending on the magnitude of the change in approved charges and in the use of each type of service. However, the proportion of procedural to nonprocedural and inpatient to ambulatory services among physician services is unknown and might change with a change in approved charges.

In addition, the practice of medicine is not always precise. There is general agreement about the need for some services for specific conditions (e.g., in vitro cultures for suspected urinary tract infections) and the need for providing services in certain sites (e.g., treatment for hip fractures in the hospital). Changes in approved charges would be unlikely to affect the provision of such services. For many presenting conditions, however, physicians must use their judgment in choosing among possible diagnostic and therapeutic services and sites. The finding that the cystoscopic rate for urologic conditions in one medical market area in Maine is more than double the rate for the State as a whole, while the cystoscopic rate in another medical market area is only about half the average, for example, indicates the discretionary nature of cystoscopy (568). A procedure that can be performed successfully either as an ambulatory

Table 4-3.—Medicare Approved Charges, Percent Distribution of Approved Charges, and Assignment Rates for Physicians' Services, by Combinations of Place and Type of Service, 1981

	All places	Office	Inpatient hospital	Home	Outpatient hospital	Independent	Skilled nursing facility	Other places
Approved charges (in $000s)								
All types of services	$11,239.8	$3,202.8	$7,143.9	$71.0	$532.2	$39.0	$150.1	$100.8
Medical care	4,516.7	1,780.9	2,319.3	60.2	181.5	—[a]	127.4	47.4
Surgery	3,643.4	365.1	3,125.8	2.0	137.9	—[a]	3.2	0.4
Consultation	381.0	63.8	304.0	0.6	7.1	—[a]	5.3	0.2
Diagnostic radiology	864.9	358.4	385.4	1.0	110.5	1.0	8.1	0.5
Diagnostic laboratory	834.1	536.9	222.6	2.4	27.2	38.0	2.9	4.1
Radiation therapy	150.9	47.2	53.9	—[a]	47.0		—[a]	—[a]
Anesthesia	535.0	2.1	529.6	0.1	3.1	—[a]	—[a]	—[a]
Assistant-at-surgery	195.8	2.0	192.2	0.1	1.5	—[a]	—[a]	—[a]
Other medical services	127.0	46.4	11.1	319.3	16.4	—[a]	3.2	45.3
Percent distribution of approved charges								
All types of services	100.0%	28.5%	63.6%	0.6%	4.7%	0.3%	1.3%	0.9%
Medical care	40.1	15.8	20.6	0.5	1.6	—[b]	1.1	0.4
Surgery	32.3	3.2	27.8	—[b]	1.2	—[b]	—[b]	—[b]
Consultation	3.4	0.6	2.7	—[b]	0.1	—[b]	—[b]	—[b]
Diagnostic radiology	7.7	3.2	3.4	—[b]	1.0	—[b]	0.1	—[b]
Diagnostic laboratory	7.4	4.8	2.0	—[b]	0.2	0.3	—[b]	—[b]
Radiation therapy	1.3	0.4	0.5	—[b]	0.4	—[b]	—[b]	—[b]
Anesthesia	4.8	—[b]	4.7	—[b]	—[b]	—[b]	—[b]	—[b]
Assistant-at-surgery	1.7	—[b]	1.7	—[b]	—[b]	—[b]	—[b]	—[b]
Other medical services	1.1	0.4	0.1	—[b]	0.1	—[b]	—[b]	0.4
Assignment rates (percent)								
All types of services	51%	37%	54%	57%	69%	40%	83%	79%
Medical care	51	34	59	36	81	—[b]	81	85
Surgery	48	42	48	—[b]	54	—[b]	—[b]	—[b]
Consultation	60	41	63	—[b]	57	—[b]	—[b]	—[b]
Diagnostic radiology	57	38	71	—[b]	67	—[b]	96	—[b]
Diagnostic laboratory	48	40	64	—[b]	66	40	—[b]	—[b]
Radiation therapy	62	46	72	—[b]	67	—[b]	—[b]	—[b]
Anesthesia	45	—[b]	45	—[b]	—[b]	—[b]	—[b]	—[b]
Assistant-at-surgery	48	—[b]	48	—[b]	—[b]	—[b]	—[b]	—[b]
Other medical services	62	44	39	—[b]	93	—[b]	—[b]	77

[a] Less than $0.1 million.

[b] Less than 0.05 percent.

NOTE: Columns and rows may not add to 100 percent due to rounding.

SOURCE: I. Burney and G. Schieber, "Medicare Physicians' Services: The Composition of Spending and Assignment Rates," *Health Care Financing Review*, forthcoming.

or as an inpatient service is cataract surgery (161). Increasing the approved charge for nonprocedural and ambulatory services might affect the choice of services and sites in cases where the choice is discretionary. The effect on total volume of services and expenditures cannot be estimated, because among other factors, the number of such discretionary services is unknown.

If approved charges for procedural and inpatient services were lowered, beneficiary costs would increase whether or not there was an increase in use, because beneficiaries' increase in nonassigned liability would almost always be greater than their decrease in coinsurance. If approved charges for procedural and inpatient services were lowered as approved charges for nonprocedural and ambulatory services were raised, the net effect on beneficiary costs would be uncertain. The change in beneficiary unassigned liability and coinsurance would depend on the extent to which assignment for procedural and inpatient services decreased and assignment for nonprocedural services increased and on the absolute changes in approved charges and the magnitude of any changes in use.

Access.—If approved charges for procedural and inpatient services were reduced, the ratio of approved to billed charges would decrease, assignment rates would fall, and access could decrease. On the other hand, competition among providers of many procedural services is likely, given the current and projected supply of most surgical specialties and some internal medicine specialties. Most national studies project a continued growth in the supply of these physicians and an oversupply by 1990 (176). Competition among physicians in the form of taking assignment could be financially rewarding, if beneficiaries considered the differences in their liability between assigned and unassigned claims when choosing physicians. Furthermore, one study found that surgical assignment rates were not significantly related to payment levels for surgical services (393).[9] Also, since a reduction of 10 to 20 percent in payment rates for many procedures and inpatient hospital visits would still give physicians high Medicare net revenues, assignment rates might not decline substantially if approved charges for such services were lowered (166).

The relationship between Medicare approved charges and the price paid by other insurers also affects access to procedural services. If Medicare's lower approved charge for a service was much below the price allowed by other insurers, some physicians might choose not to provide the service to Medicare beneficiaries. For this situation to occur, however, there would have to be an adequate non-Medicare market for the service, such as there is in the case of MRI (234) and ESWL (431).

Access to hospital-based, procedure-oriented physicians—radiologists, pathologists, and anesthesiologists—might not be affected by controlling approved charges for their services. Pathologists and radiologists currently have very high assignment rates (68). Although anesthesiologists accept assignment less frequently than thoracic surgeons, anesthesiologists accept it as often as surgical specialists such as urologists and orthopedic surgeons (68). Competition might be a minor factor in assignment decisions for some radiologists and pathologists. The Graduate Medical Education National Advisory Committee projected that specialists in anesthesiology, pathology, and therapeutic radiology would be in near balance with supply in 1990; diagnostic radiology was projected to be a specialty in oversupply (57). Anesthesiologists were originally projected to be in undersupply, but during the last few years residency programs have grown to such an extent that anesthesiology may be in oversupply in the near future (350).

Raising approved charges for nonprocedural or ambulatory services would increase assignment rates and hence access to these services. The use of pneumococcal vaccination might increase, although its low use seems related more to the lack of physician and beneficiary knowledge of its effectiveness than to a low payment level.

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[9] The relationship of assignment and reimbursement rates for laboratory and X-rays services is unclear. The main finding of the Rice study is that there is a significant positive relationship between changes in reimbursement rates for medical services and changes in assignment rates (393). Although changes in the assignment rates for laboratory and radiological services appear to be significantly correlated with changes in the reimbursement rate for medical services, the finding may be an aberration of the claims system. The Medicare program prohibits physicians from assigning only a portion of services that are delivered to a beneficiary at the same place and time. Thus, if laboratory and radiological services were provided at the same time and place as a medical service, which is likely, they would most likely be listed on the same claim, and accepting assignment for these services would be directly connected to accepting assignment for the medical service.

Quality.—Effects of reducing the variation in approved charges by type and site on quality of care would depend, in part, on the extent to which assignment rates were affected, and, in part, on the appropriateness of services.[10] Reviews of the literature have concluded that there is excessive use of hospitals, some surgical services, and inpatient laboratory services in teaching hospitals and to a lesser extent in nonteaching hospitals (108,109,110,581). However, there is a problem in determining the appropriate use of *specific* procedural and inpatient services, as illustrated by the great variation in the practice of medicine and the lack of scientific norms of medical care (568). For example, in Iowa, the chances that a male resident 85 years old will have had a prostatectomy range from 15 percent to 60 percent in different medical service markets (568). This large variation suggests that for some patients a prostatectomy may have been inappropriate treatment and may have constituted poor quality of care. Surgery and hospitalization are not without risk: the mortality rate attributable to a prostatectomy, for example, ranges from 1.2 percent to 4 percent (568).

If lowering approved charges reduced the inappropriate use of procedures and inpatient care, quality could be improved (184). However, there is the danger that cutting the payment level for all procedural and inpatient services might reduce the provision of necessary as well as unnecessary services (108,109,110,581). Patients with severe illnesses that require much specialized, procedural care might be harmed by such a change (194).

Quality related to the use of nonprocedural and ambulatory services could also be influenced by raising approved charges for nonprocedural and ambulatory services and increasing access to such services. Because the need for an increase in use has not been identified, the effect on quality of increasing access to such services is not clear.

Reducing the Variation in Approved Charges by Specialty and Location[11]

In the 1970s, a major concern of Congress was rationalizing the distribution of physicians by specialty and by location (492) by reducing the variation in approved charges for similar services provided by generalists and specialists and provided in different geographic localities, particularly within States. Recently, policy interest has been focused on reducing such variations as a cost-containment mechanism.[12]

For the most part, differences in approved charges are relevant for services that are provided by physicians of many disciplines: the greatest overlap in services provided by generalists and specialties lies in the visit category, which nationwide accounts for 41 percent of Medicare approved charges (69). In 1982, the prevailing charges nationwide for different types of visits, the five most common procedures, averaged 24 to 73 percent higher for specialists than for generalists (see table 4-4).[13]

Almost all the empirical evidence indicates that physicians practicing in urban and suburban areas usually receive higher Medicare approved charges for similar services than physicians practicing in

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[10] In most of the studies, inappropriate services are defined as services that "provide no significant benefit or . . . could be rendered in a less costly lower level institution or outpatient setting" (163).

[11] The focus of this discussion is on reducing the variation in prices within States, since this geographic division best reflects urban/rural price disparities, which are a policy issue of interest.

[12] Equity to providers could be a reason for attempting to modify the wide differentials in payment levels between generalists and specialists and among geographic localities. Opinions on Medicare's responsibility in this regard differ. The opinions are based on both a philosophical stance and practical considerations of access and costs. If equity among providers were one of the Medicare program's concerns, the program's ability to act as a prudent buyer, i.e., to provide its beneficiaries with the most appropriate services available at the lowest possible cost to the program, could be constrained by the need to assure equitable revenues to providers. On the other hand, Medicare would be concerned if disparate charges among providers and among areas decreased beneficiaries' access to appropriate health services.

[13] There are many problems in analyzing national Medicare data based on carrier data, because of the variety of ways in which carriers classify specialists. A specific problem is that the specialty standing of family physicians varies among carriers. In calculating prevailing charges, Medicare carriers usually categorize general practitioners as generalists and internists as specialists, but nationwide information on carrier practices about the categorization of family physicians on the carrier level for reimbursement purposes is not available. Conversations with staff of the Inspector General's Office of the Department of Health and Human Services suggest that carriers could categorize family physicians as a specialty, but not all carriers do so (542).

Table 4-4.—Medicare Weighted Mean Prevailing Charges for the Five Most Common Services, Specialist/Nonspecialist, Calendar Year 1982

Service	Nonspecialist	Specialist	Percentage specialist differential
Brief F/U[a] hospital visit	$16.63	$23.90	43.7%
Limited F/U hospital visit	19.63	25.88	31.8
Limited F/U office visit	16.99	21.05	23.9
Brief F/U office visit	13.58	17.67	30.1
Minimal F/U office visit	16.11	27.92	73.3

[a] F/U = Followup.

SOURCES: U.S. Department of Health and Human Services, Health Care Financing Administration, Bureau of Program Operating, unpublished computer tabulations from the *Directory of Medicare Prevailing Charges*, W. Merashoff, personal communication, June 19, 1985.

rural and inner city areas (71). As an example, in 1975 Medicare approved charges for specialists averaged 23 percent higher in metropolitan than in nonmetropolitan areas. When adjusted for cost-of-living differences, the payment level difference was reduced to 8 percent (71). More recent data found that fees for first office visits were 52 percent higher in urban areas than in rural areas and median fees for revisits were 7 percent higher in urban areas than in rural areas (354). A study by Pennsylvania Blue Shield on physician pricing patterns under Medicare in Pennsylvania had less definitive findings. Interarea price variations by specialty varied with the procedure, and, although prices tended to be highest in the Philadelphia urban area, prices in rural areas were not always the lowest (372).

Costs and Efficiency.—If there was an increase in volume, lowering approved charges for specialist and urban services with or without raising approved charges for generalist and rural services could increase Medicare costs. But, available data suggest that if there were no increase in volume, lowering charges for specialist and urban services could constrain the rate in growth of Medicare expenditures for physician services. If approved charges for generalist and rural services were raised at the same time, the effect on Medicare expenditures would be uncertain. Medicare expenditures could increase if the costs saved by the program due to a decrease in approved charges for specialist and urban services were less than the costs added to the program by the increase in approved charges for generalist and rural services. On the other hand, Medicare expenditures could decrease if the costs saved by the program due to a decrease in approved charges for specialist and urban services were more than the costs added to the program by the increase in approved charges for generalist and rural services.

One approach to lower approved charges for specialist services and to raise approved charges for generalist services would be to calculate a single prevailing charge for all physicians in a locality. If a single prevailing charge were calculated for generalist and specialist services in a locality, the effect on Medicare expenditures would depend on the proportion of generalist and specialist services in the locality and the distribution of customary charges for generalists and specialists. If the distribution of customary charges for generalist and specialist services was narrow calculating a single 75th percentile for both generalists and specialists would be about the same as calculating a separate 75th percentile for each and averaging them. In this case, calculating a single 75th percentile for specialists and generalists would not affect Medicare expenditures.

Or a single prevailing charge could be calculated for all physicians in a State as a way of lowering approved charges for specialist services and raising approved charges for generalist services. This approach would also lower approved charges for urban services and raise approval for rural services.

Research on the cost effects of reducing variations by specialty is sparse and has not considered the effect of changes in prevailing charges on volume of services. One study found no significant differences in Medicare costs when prevailing charges were computed separately for each specialty as compared with computing them for physicians grouped into three broad categories (331). Program outlays were reduced about 2 percent in a simulation that eliminated specialty differentials by computing a prevailing charge for all physicians in a county (330). If assignment continued on a claim-by-claim basis, approximately half of the beneficiaries would have had an increase (averaging 17 percent) in out-of-pocket expenses (330).

Evidence on the effect of reducing variations in prevailing charges by locality is equally scanty. Unfortunately, the results of the few available studies are mixed and inconclusive, leaving unanswered the question of how reducing variations within a State would affect Medicare program costs and beneficiary liability. The major issue of volume response also remains unresolved.

When prevailing charges were calculated on a statewide basis rather than by localities within a State, prevailing charges for physicians in the major urban areas decreased and the prevailing charges for physicians in small urban and nonurban areas of the State increased as expected (394). However, total Medicare expenditures were not reduced: physicians billed for a greater number of services and more complex services.

A nationwide study performed for the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) examined the cost effects of reducing variations in prevailing charges by specialty and by location (504). Although the findings cannot be generalized to the Medicare program for reasons such as wide differences in patient population and program administration between the two programs, the findings are of interest. An increase in CHAMPUS program expenditures was estimated if separate prevailing charge screens for specialists, and, where applicable, separate charge localities in a State were eliminated and statewide prevailing charge screens for all physicians were established. The new method of calculating prevailing charges was adopted in 1980. The increase has been, as projected, approximately 5 percent annually over any increase in CHAMPUS expenditures in the absence of the policy change (241). A corresponding increase in beneficiary cost-sharing occurred. Although increased physician participation had been anticipated when charges were increased, there has been no increase in assignment rates (241).

Access.—A major policy issue has been improving access to primary care services provided by physicians of appropriate training.[14] Reducing variations in approved charges by specialty and within States would affect access to general practitioners, family physicians, and internists differently, because carriers classify general practitioners as generalists and internists as specialists. Carriers can classify family physicians as specialists, but not all carriers do so.

If there were no increase in volume, assignment rates and access to primary care provided by general practitioners could increase if approved charges for the primary care services of general practitioners were increased at the same time as approved charges for such services provided by specialists were lowered. In localities where family physicians are classified as generalists, increasing approved charges for the primary care services of generalists could increase the assignment rates of family physicians and access to their primary care services.

If specialists' approved charges were lowered, for example, by calculating a single prevailing charge for generalists and specialists, and there was no increase in volume, there is a strong possiblity that assignment and beneficiary access to primary care provided by family physicians (if they were in the specialist prevailing charge screen) and internists could decrease.

The effect of reducing specialty differentials on physicians' decisions to train in the primary care specialties is problematic.[15] If approved charges for specialist services were decreased and there were no increase in the volume, there would be a decrease in Medicare expenditures for services provided by internists and family physicians, in those areas where family physicians are classified as specialists. If approved charges for generalist services were increased as well, there would be an increase in Medicare expenditures for services provided by general practitioners.[16] If there were an increase in the volume of services, the effect on Medicare revenues for each specialty would be uncertain. Furthermore, the effect of financial incentives on specialty choice in today's economic environment has not been investigated. The early literature indicates that financial incentives played only a minor role in specialty choice (334). However, those studies were performed when debts for medical education and malpractice insurance rates were much lower.

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[14] Although the term "appropriate" training is difficult to define, Federal policy, mainly through the channel of training grants for primary care residencies, has explicitly accepted that primary care services are to be provided by physicians trained in primary care and has defined primary care physicians as general and family physicians, general internists, and general pediatricians. The first three medical disciplines are of import for the elderly Medicare population.

[15] The number of primary care physicians (general practice, family practice, general internal medicine, and general pediatrics) increased at about the same rate as total physicians and grew from 56 physicians per 100,000 population in 1970 to 70 physicians per 100,000 population in 1981 (544). The Graduate Medical Education National Advisory Committee has stressed training primary care physicans to improve the balance of physicians across specialties.

Access to primary care services provided by primary care physicians is also affected by the geographic distribution of these medical disciplines. However, the ability of or need for statewide prevailing charges to attract more primary care physicians into poorly served areas is not clear. Numerous factors affect location decisions. Although a series of studies in the 1960s and 1970s suggested that economic factors were a minor factor (334), later analyses of Canadian physicians reported a positive, although small, relationship between income level and location choice (36,184). Berry found that if gross earnings increased 1 percent in medical service areas in Quebec, net immigration increased by 3.4 percent (36). Comparable results were found by Hadley in Canadian provinces; a 1 percent increase in net income could expect to attract 3.3 percent more new physicians (184).

More recent research showed that more physicians in the United States have located in nonmetropolitan areas (427). Some researchers have concluded that the economic forces of an increase in the total supply of physicians and the overall growth rate of each specialty determines the geographic dispersion of the specialty (344).

Although between 1970 and 1979, the number of general practitioners and family physicians in the smaller towns declined, in 1979 nearly every town with a population of 5,000 had a general practitioner or family physician, and 85 percent of towns with a population of 2,500 to 5,000 had a general practitioner or family physician present (344). In 1982, there were still 131 counties housing 3.5 million people (approximately 2 percent of the population) without an active physician (124). The Newhouse study showed that very few rural residents lived far from a physician and predicted an increase in the diffusion of family physicians into the smallest towns as their numbers grew (344). The Bureau of Health Professions has predicted that the diffusion of primary care physicians is expected to reduce overall shortage area needs in the coming years, although needs will persist in many currently designated shortage areas (546).

As noted earlier, the evidence suggests that approved charges in rural areas, for the most part, are lower than in urban areas. Higher practice costs in urban areas could explain the differences, however, the data on the costs of operating physicians' practices in different locations are conflicting (50,334,355,512). Indeed, the latest data indicate that practice costs are higher in rural than in urban areas (355). To the extent that urban/rural differences in approved charges exceed differences in urban/rural practice costs, physicians might be discouraged from practicing in rural areas.

If one believes that more family physicians are required in sparsely populated areas, reducing the variation in approved charges within States and thereby increasing payment rates in rural areas might be sufficiently effective on the margin to increase the interest of family physicians in settling in such localities. The number of family physicians increased 22 percent from 1977 to 1985 (344), and graduates of family practice residency programs are more likely to settle in smaller and nonmetropolitan areas than are other specialties. Since established physicians are not likely to move, the location choices of young physicians are most apt to be influenced by financial considerations.

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[16] The increase in approved charges for general practitioner services is a moot point in the long term, since few if any general practitioners are now being trained.

A much lower percentage of communities with 2,500 to 5,000 people had a practicing internist than had a general practitioners or a family physician in 1979, although the percentage of communities with an internist had increased 35 percent from 1970 to 1979. If one considered it necessary to further increase the expected rate of movement of internists into rural areas, narrowing the difference in internists' prevailing charges between metropolitan and nonmetropolitan areas might influence the location decisions of new internists. Medicare is an important source of revenue for internists. Other than thoracic surgeons, internists derive the largest percentage of gross income (29 percent) from Medicare of any specialty (see table 2-8).

Based on precedent, internists in urban areas might further decrease their assignment rate if modifying geographic differentials meant a decrease in approved charges in urban areas. Therefore, at the same time that reducing geographic differentials might interest new internists to locate in less populous areas, such a change might decrease internists' assignment rates and beneficiary access in urban areas.

It should be noted that reducing the variation in approved charges by specialty might also affect access to primary-care services provided by nonprimary-care specialists (1). Most nonprimary-care physicians have higher assignment rates than primary care physicians. If these data indicate that nonprimary-care physicians are more satisfied with Medicare payment under assignment than primary care physicians, access to primary care services provided by nonprimary-care physicians may not be unduly affected by a decrease in payment. If, on the other hand, these data are more reflective of the nonprimary-care services of nonprimary-care physicians, the assignment rate for, and access to, nonprocedural services provided by nonprimary-care specialists might decrease if approved charges for such services were decreased.

Quality.—Anticipating the effects on quality of reducing the variations in prices for services by specialty is confounded by the unresolved issue of whether generalists and specialists deliver "similar services," or whether specialists provide higher quality care than generalists. If specialists provide the same services as generalists, both groups of physicians should be paid at the same level. However, the degree of similarity between services cannot easily be distinguished from the coding system, the basis of payment under any fee-for-service system. Even though the code for a service provided by both general practitioners and specialists is the same, the service provided under the code may be different. For example, almost all visit codes do not differentiate by diagnosis or the content of the service provided.

One school of thought is that services provided by generalists and specialists are similar for payment purposes (336,420). Medicare's coverage policy is consistent with this view, since Medicare does not limit coverage for most services according to specific training, but usually permits all physicians to provide all services (414). Another view is held by those Medicare's carriers that use different fee screens for specialists and general practitioners on the grounds that services delivered by specialists are different, more intensive, or of higher quality than those provided by generalists and that the more extensive training of the specialist warrants a higher level of payment.

The issue of "similar services" for payment purposes has not been resolved by court action. The Michigan Academy of Family Physicians successfully sued for the elimination of specialty screens by their Medicare carrier. The District Court found that if and when services are found to be similar, prevailing charge payment should be the same regardless of who provides the service, thus implicitly rejecting the argument that differences in charging patterns among specialties are indicative of different services' being performed under the same procedure code (309). Although the U.S. Court of Appeals, Sixth Circuit, partially affirmed the District Court's ruling, the decision is currently being submitted to the Supreme Court for the second time for reconsideration (534).[17]

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[17] Another pertinent court action took place in Florida where the Medicare carrier does not employ any specialty reimbursement differentials. The Dade County Society of Internal Medicine sued to force the carrier to use specialty screens for internists, and by implication, for other medical disciplines. The plaintiffs argued that Medicare beneficiaries in Florida receive lower allowances than in other areas of the country when beneficiaries use the services of

Studies of care given by different specialists provide some but inconclusive support for the position that specialty training is associated with better quality of both ambulatory care and hospital care when specialized physicians are practicing within the domain of their training (369,370,392,398). The evidence that physician performance is improved by specialization per se is weaker (194) and contradictory (416). An analysis of visits found that nearly all specialists have significantly longer visits than general practitioners and family physicians (322). However, there is no evidence to support that differences in time result in differences in quality. Indeed, time per se may not be an important measure of quality.

In addition to the lack of definitive evidence on whether specialists provide better care than generalists, there are other unknown and confounding factors that stand in the way of determining how reducing the variation between generalists' and specialists' approved charges would affect quality. These factors include the extent to which specialists provide care for conditions outside of their own specialty, the inability to determine specialists' care because of the variation in the number of prevailing charge screens among carriers, and the relationship between quality and financial incentives. Quality may depend not only on the kind of physician, but also on the interaction among the kind of physician, the kind of patient, and the kind of service.

The quality issue is further complicated by the lack of a standard definition of a specialist by Medicare for payment purposes. A General Accounting Office survey of three carriers found that roughly 50 percent of physicians who classify themselves as specialists are not board certified in their declared specialty. About one-fourth of the physicians that classified themselves in one subspecialty of internal medicine were not board certified in either internal medicine or the board specialty (475). However, there are no data on the relationship of quality to board certification as compared with quality and board eligibility or quality and self-declared specialization.

Negotiated or Discounted Fees

Some private sector payers and Medi-Cal (California's Medicaid program) have recently adopted selective contracting with providers, primarily as a cost-containment measure. Under selective contracting, payers contract with selected providers, usually hospitals, who agree to accept either a negotiated fee or a flat discount from their charges as payment in full. The experiences of private sector organizations and Medi-Cal with selective contracting may provide insight into the potential of using this method as an option in the Medicare program, while CPR continues as Medicare's major way of paying physicians. The discussion that follows considers two questions. Does the evidence show that the method is worthy of consideration for Medicare? Furthermore, does Medicare have the authority and capability to implement a discounting system?

Preferred Provider Organizations

Negotiated or discounted fees in the private sector have been utilized as a financial component of PPOs and not as a payment method used by traditional indemnity plans. A PPO "may be an organization, a delivery system, or an arrangement between providers and third-party payers" (156). PPOs are characterized more by their diversity than by their similarity (see app. D).

The third party pays the PPO plan, which in turn makes arrangements to pay the providers. One of the ways in which PPOs vary is how they pay providers. Payment mechanisms for hospitals range from negotiated per diem reimbursement (244) to capitation (52) and discounted charges (156). Currently, most PPOs reimburse physicians either by negotiating a discount from an established fee schedule or by discounting from usual, customary, and reasonable charges[18] (53, 156), with discounts ranging from 5 to 30 percent (156). Two payment methods that are gaining in use are relative value scales constructed specifically for a PPO and capitation (144). Indeed, some experts consider discounting a transitory payment

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specialists, and, therefore, beneficiaries allegedly suffer both direct economic loss and possible injury when they are discouraged from consulting a specialist. After 5 years of litigation, the Dade County Society of Internal Medicine withdrew the case in the spring of 1985 (534).

[18] The usual, customary and reasonable charge method is basically the same as Medicare's CPR method of paying physicians, but uses different nomenclature (see app. C). For clarity of discussion, this chapter substitutes Medicare terms for those used by the private sector.

methodology and expect that many PPOs will evolve into health maintenance organizations (HMOs), as risk is increasingly shared with providers (53).

Relation of PPO Payment Methods to the CPR Method

PPOs that discount from fees that are determined by usual, customary, and reasonable methods use payment methods that are very similar to those used by Medicare to constrain prices. If there is no available claims history, the PPO may reduce physician charges based on their billed charges. This method is used by a few PPOs that have been established by organizations other than insurers, but its use appears to be declining for a number of reasons, including potential antitrust considerations (177). The method is similar to taking assignment under Medicare—both methods reduce payment from an individual physician's actual charges for a service when the actual charge is greater than the approved charge—and to Medicare's method of paying physicians who choose to become participating physicians under the arrangements mandated by the Deficit Reduction Act of 1984. Like Medicare, PPOs that discount from fees reduce charges for all services provided by participating physicians when their actual charges are greater than the program's approved charges. Furthermore, Medicare's participating physicians have signed an agreement for a year's participation, an acceptance of assignment on all claims, which is similar to physicians' contracting with a PPO.

PPOs that have a claims history of physician payment usually evaluate physician charges in an area and declare some reduction on an areawide basis. Again, the methods used are similar to those used or those that could be used by Medicare. Some PPOs lower the percentile at which the prevailing charge is calculated (462a); some offer a percentage of an area's prevailing charge (29); and some establish payment at the mean of the prevailing charge (7). A very few have lowered the percentile at which the prevailing charge is calculated for medical services less than they lower the percentile at which the prevailing charge is calculated for surgical services (244).

Both PPOs and Medicare use utilization review to control the volume of inpatient services, and many PPOs go beyond Medicare controls to include prior authorization before hospitalization. In a survey of members of the American Association of Preferred Providers, almost half of the 143 operational members reported that they had a utilization program in place for cost-containment purposes (7). Relatively few PPOs have developed "adequate protocols to review clinical efficiency or appropriateness of care" (51). It is unlikely that PPOs utilization review programs have been extended to cover office-based physicians' services. Although under Medicare utilization review for office-based physicians is required, the implementation of the review varies considerably among carriers and is often ineffective in containing costs (475).[19]

The major way that PPOs differ from Medicare in physician payment is not in pricing method, but in the negotiation of contracts with selected providers. Under Medicare, almost any physician who chooses can participate in the program, but in a PPO arrangement, the PPO chooses the providers with whom it wishes to contract. The methods for selecting participating physicians vary. Some, but far from all, PPOs limit physician enrollment on the basis of performance standards (53). Future PPOs may attempt to restrict members to practitioners with cost-effective practice patterns (51). Very few PPOs have the standards or the technology capable of systematically evaluating the cost-effectiveness of physicians.

Dimensions of Evaluation

Evidence of the effect of discounting by PPOs in the private sector on quality, access, and costs is primarily limited to information supplied by sponsors of PPOs and other interested parties. The number of PPOs and their rate of growth are indicators of private sector interest in PPOs, and since the emphasis in the private sector is on controlling costs through price competition, an oblique expression of the private sector's evaluation of the cost-containment potential of PPOs. Despite wide variations in estimates (see app. D), it is evident that PPOs have increased considerably since the acronym was first established in 1981 (7) and will increase in the future.

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[19] Sections 7500-7535 of the Medicare Carriers Manual, Part C, Claims Process provides instructions for utilization review by carriers. The General Accounting Office concluded that the Health Care Financing Administration's policies and practices have tended to provide disincentives to carriers for performing effective utilization review (475).

To the extent that PPOs employ discounting as a payment methodology, physicians' acceptance of PPO discounting is indicated by their enrollment in PPOs. One study estimates that overall 5 percent of the Nation's doctors had a contractual arrangement with a PPO in 1983 (156). A much higher percentage of physicians was involved in California, which is the State where the largest number of PPOs are located.[20] The level of physician participation would appear to be linked with the degree of competition in an area.

Information on patient acceptance of PPOs is just developing, and available numbers are too small to be statistically significant. In 1983, only 14.6 percent of the physicians in California who had signed contracts with PPOs had seen PPO-linked patients (374). Of all physicians, obstetrician/gynecologists and orthopedists were most likely to have seen a PPO patient. The likelihood of patient participation was also higher among the larger metropolitan areas than in the semi-urban and rural areas, and varied among metropolitan areas (374).

Objective analysis of the cost-effectiveness of PPOs is sparse. A study of Stouffer Corporation's PPOs found significant cost savings the first year. In addition to discounting, the PPOs had a rigorous monitoring system of utilization review in participating facilities, which had lower charges than the community norm before the PPOs were functioning (53).

Selective contracting by Medi-Cal with hospitals on a negotiated rate basis yielded substantial savings to the State from reduced payments, with little evidence of reduction of quality of care (245). The Medi-Cal program does not contract with physicians, although there is legislation authorizing it to do so. Although private payers have signed contracts with physicians, by early 1985 the practice was still not sufficiently widespread to have affected office practice patterns. Assessment of the effects of private sector contracting on access to physicians and quality of care remains to be done.

Selective contracting with negotiated or discounted fees would allow Medicare to use its leverage in the market place to bargain with physicians about the price of services and assignment (242). Furthermore, Medicare could technically implement a discounting method based on selective contracting (see following section on administrative feasibility). One problem, however, is that although PPOs in the private sector are often designed to reward patients for using member physicians, Medicare might have problems in implementing a reward system. Reducing deductibles and coinsurance of those beneficiaries who use less costly physicians might not be effective because of the extensive use by Medicare beneficiaries of Medigap insurance that covers their cost-sharing liability. On the other hand, Medicare beneficiaries might choose not to purchase Medigap insurance if they were able to obtain the coverage they want from Medicare. Reducing premiums for some beneficiaries and not others might be politically troublesome.

Technological Change

An important condition affecting the development of technologies is the potential market, which is determined in large part by third-party reimbursement (487). CPR reimbursement provides physicians with financial incentives to provide technology, particularly equipment-intensive and surgical technology, to the extent that their net revenues are higher with greater use. Although the CPR payment method has been instrumental in the development of cost-increasing technology, it has provided little incentive for physicians to choose cost-saving technology.

By reducing Medicare's approved charges, the modifications to CPR described in this chapter could change physicians' financial incentives to adopt and use medical technology and, in turn, affect the market for medical technology.[21] The effect on the market for medical technology cannot be ascertained, however, because the effect of lowering approved charges on the volume of services provided is uncertain.

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[20] One-fourth of physicians contacted in California to join PPOs have signed a contract with one or more organizations. If physicians not yet contacted signed up at the same rate as those that were contacted, 35.5 percent of physicians in California would have signed PPO contracts (374).

If the volume of services provided to Medicare beneficiaries in response to lowered approved charges were to increase, the effect on the market would depend on the extent to which increased Medicare revenues to physicians from the increased volume compensated for the decrease in Medicare revenues to physicians from decreased approved charges.

If the volume of services did not increase, constraining approved charges would decrease physicians' demand for services that they use in their practice. Generally, to the extent that physicians' Medicare net revenue for a technology decreased, physicians' financial incentives to refer patients for services to other facilities would increase. Beneficiaries receiving highly sophisticated, expensive and new technology, such as MRI, would probably be referred to a regional facility. Beneficiaries receiving more established technologies that physicians might have in their offices but need replacement, such as mammographic, electrocardiographic, and X-ray equipment, could be referred locally, for example, to an office that only performs mammography located in the same building as their physician. Manufacturers could respond by developing cost-saving office-based equipment as well as continuing to develop technology for larger ambulatory facililites. Office-based laboratory testing equipment, for example, is already being developed in response to financial incentives, such as Medicare's prospective payment for inpatient services, to move care to less financially constrained ambulatory sites (332).

A number of factors could work against a shrinking market if Medicare's approved charges were lowered. First, the modifications to CPR might restrain approved charges for only a relatively short period, and, hence, might not affect physicians' adoption and use of technology. Second, the competitive nature of today's health care system and the fear of malpractice claims would undoubtedly affect physician behavior and might soften the decrease in physicians' demand for technology. Lastly, the non-Medicare market might be sufficiently large to override any changes in the diffusion of the technology.

Moreover, the effects that lowering Medicare's approved charges would have on technologies for which Medicare has market power and that provide a large part of physicians' incomes might be somewhat different from the effects for other technology. For example, about 80 percent of the cataract surgeries performed in the United States are covered by the Medicare program, and decreasing prices for such surgery would have a dramatic effect on the incomes, as well as the Medicare revenues, of ophthalmologists who perform the surgery (161). For cataract surgery, unlike MRI and ESWL, there does not appear to be another large population who could be provided with the procedure if physicians perceived a lower level of remuneration as unsatisfactory. Although some ophthalmologists might reduce the amount of cataract surgery in response to lower approved charges, others might increase the number of such procedures. In any case, the growing supply of ophthalmologists would propbably increase the aggregate supply of ophthamologic surgery, so that reducing Medicare prices is unlikely by itself to decrease the use of the procedure and the use of implantable lenses (161). Because of the potential for volume increase, the financial incentives for the development of lower priced lens implants are not clear.

Administrative Feasibility

The administration of the Medicare program's physician payment system is complex, cumbersome, and characterized by extreme variation among carriers along a series of parameters and by confusion among beneficiaries and physicians (see app. C and ch. 2). Although any of the above modifications of the current CPR method are administratively feasible with current computer technology, changes with the greatest promise of simplifying administration are those that would reduce the number of factors for discriminating among physicians in determining their level of payment. The disapproval rate for physician claims is much higher under Medicare than in the private sector partly because private sector payers make fewer distinctions among physicians, making payment more consistent, uniform, and understandable (488). Competitive pressures among insurers to pay subscribers' bills is also instrumental in the lower disapproval rate. Perhaps of greater import is the fact that Medicare's prevailing charges are calculated at the 75th percentile of customary charges, whereas the corresponding private sector prevailing charges are calculated at the 80th to 90th percentile.

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[21] The financial constraints on the use of technology imposed by Medicare's prospective payment system for hospitals has had an effect on the market for technology, and has played a role in shifting some technology into ambulatory sites (489). Changes in physicians' Medicare revenues would also be expected to affect the market, since physicians influence the use of technology both in inpatient and ambulatory sites.

Both freezing customary or prevailing charges and lowering the percentile at which prevailing charges are calculated could be easily and inexpensively implemented, because they require no new data or basic changes in Medicare's physician payment system or in claims processing. Nonetheless, these methods retain all the features that make the system so difficult to administer. Furthermore, if such modifications resulted in prevailing charges that were appreciably lower than now, carriers could have increased administrative expenses due to an increase in telephone calls, letters, and appeals from physicians.

Reducing the variation in approved charges for services by type and site of service might make the CPR payment method even more complex than at present. Lowering approved charges for some services but not others, or lowering approved charges for some services and raising approved charges for others would require the identification of specific services and would generally increase the number of factors used to determine physicians' charges. The Health Care Financing Administration (HCFA), with expert advice, could identify those services whose appproved charges would be lowered and those services whose approved charges would not be changed or would be raised. The carriers would then have to implement HCFA's decisions. Although not outwardly obvious, lowering approved charges for inpatient services would also complicate the administration of CPR, because in practice carriers construct one prevailing charge for surgical services irrespective of where performed (347). Thus, additional prevailing charges would have to be developed for surgical services performed on an ambulatory basis. Again, physicians who were adversely affected by the modifications might require carriers to spend time and effort in answering their complaints.

Reducing the variation in approved charges by specialty and within States could simplify administration. Either change would increase the uniformity of payment among physicians, although changes in payment level might initially cause a negative reaction from physicians whose approved charges were lowered.

The concept of selective contracting by negotiating fees or discounting from charges is very new to Medicare. Medicare might have some of the technical capability to implement a discounting method for physicians' services based on selective contracting. Claims administration for PPOs in the private sector has proven to be more complex and costly than many insurers had anticipated (246). Although Medicare might have the ability to identify lower cost physicians from historical data, the possibility of establishing a utilization review system for ambulatory services, a system necessary for cost saving, is less certain in the short run.

Although HCFA appears to have the jurisdiction to negotiate directly with physicians (174), such direct negotiations run counter to precedent. Since carriers have traditionally been HCFA's contact with physicians, the most likely approach is for carriers to undertake selective contracting with providers or provider groups who would lower their allowed charges (preferred providers). Establishing a category of preferred providers would require supplying physicians with copies of their customary and prevailing profiles. It would also require establishing two pricing systems for claims processing—one for physicians who would be paid by the traditional method and another for physicians who would be paid on a contract basis (347).

CONCLUSION

The effects on Medicare expenditures of lowering approved charges for all or selected services—whether by freezing customary and/or prevailing charges or by lowering the percentile at which prevailing charges are calculated—are uncertain. The relation of payment rates to volume of services has not been established in the theoretical or the empirical literature. If the volume of services does not increase in response to a reduction in approved charges, lowering approved charges would decrease the rate of growth in Medicare expenditures. If the volume of services does increase when approved charges are lowered, however, the effect on Medicare expenditures would depend on the magnitude of the costs saved by the program due to an decrease in approved charges compared with the magnitude of program costs incurred due to an increase in the use.

Lowering approved charges for all or selected services by freezing charges or lowering prevailing percentiles would have only a temporary effect at best in terms of reducing Medicare expenditures. Under CPR, increases in physicians' billed charges are later reflected in Medicare's approved charges, thereby encouraging physicians to raise their billed charges to beneficiaries. None of the identified modifications would change this feature of CPR.

Freezing charges or lowering prevailing percentiles would be likely to increase beneficiary costs regardless of whether the volume of services provided to beneficiaries changed. Since lowering Medicare payment decreases assignment rates, beneficiary unassigned liability would be likely to increase. Although beneficiary coinsurance would decrease with lower approved charges, the increase in beneficiary unassigned liability would most likely exceed the decrease in coinsurance.

An increase in beneficiaries' out-of-pocket expenses would decrease their financial access to services. Quality of care would be decreased to the extent that access to an appropriate level of services fell. If the volume of services provided to Medicare beneficiaries did not increase in response to lowered charges, physicians might increase their time spent and volume of services provided to non-Medicare patients to maintain total revenues.

Reducing the variation in approved charges for selected services would address the problem of perceived inequities in payment rates between certain services. Lowering approved charges for services over which Medicare has market power could be undertaken as an interim step or as an independent modification.

The effects on cost, access to care, and quality of reducing the variation in payment rates among services by lowering the approved charges for procedural services, inpatient services, specialist, and urban services would be similar to the effects of lowering approved charges for all services. Access to nonprocedural services, ambulatory services, generalist, and rural services, however, might not be affected.

If the variation in approved charges among services was reduced by lowering approved charges for procedural services, inpatient services, specialist, and urban services and raising the approved charges of nonprocedural services, ambulatory services, generalist, and rural services, the cost and access effects would be different. The effect on Medicare program expenditures would be unpredictable and would depend on whether the cost saved by the program due to a decrease in approved charges was equal to, greater than, or less than the costs added to the program by the increase in approved charges.

Beneficiary liability would increase for services with lower approved charges and would decrease for services with higher approved charges. The effect on net beneficiary liability is uncertain and would depend on whether the increase in beneficiary liability as a result of lowering approved charges for some services was equal to, greater than, or less than the decrease in beneficiary liability as a result of raising approved charges for other services.

During the process of reducing the variation in approved charges between procedural and nonprocedural services, Medicare could adjust approved charges for technologies whose initial payment level has been maintained although the physician time, skills, and resources required to perform the procedure have declined. Medicare could also periodically review and adjust approved charges for such technologies whether or not variations in approved charges between procedural and nonprocedural services were reduced.

Reducing the variation in approved charges by specialty and location has aspects that differ from reducing the variation in approved charges by type of service and site of service. One way of reducing the variation by specialty would be to calculate a single prevailing charge for all physicians in a locality. This approach would simultaneously lower the approved charges for specialist services and raise the approved charges for generalist services. The change in total Medicare expenditures would depend on the relative numbers of generalist and specialist services in the locality and the distribution of customary charges for generalists and specialists in the locality. Similarly, the change in Medicare expenditures from reducing locality differentials by calculating a statewide prevailing charge for all physicians would depend on the relative number of services in the different localities and the distribution of customary charges by locality.

Reducing the variation by specialty does not appear to be an effective way to stimulate physicians to train as primary care physicians; however, the effect of payment rates on specialty choice in today's economic environment has not been investigated. Reducing the variation within States might marginally influence family physicians and internists to locate in small towns. Determining the quality effects of reducing the variation in approved charges by specialty is confounded by the unresolved issue of whether specialists provide better quality care than generalists.

Controlling the approved charges of all services by providing beneficiaries with the option of receiving care from preferred providers appears to have the potential for constraining expenditures. The effects on quality of, and access to care, however, are unassessed as yet. Medicare could adopt this new method as an optional payment method for Medicare beneficiaries.

Chapter 5

Payment Based on Fee Schedules

Things are only worth what one makes them worth.
—*Moliere, Les Precieuses Ridicules*

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Chapter 5

Payment Based on Fee Schedules

INTRODUCTION

In one sense, Medicare's customary, prevailing, and reasonable (CPR) charge determination system can be thought of as being neutral with respect to prices in the physicians' services market; Medicare approved charges are simply established by identifying particular prices from the existing distribution of fees charged by the physicians themselves. As a result of this approach, however, even within a single locality and within a single specialty, any two physicians who perform a particular procedure may have different maximum approved charges. In fact, it is possible—although highly improbable—that *every* physician performing a particular procedure would have his or her own unique Medicare approved charge.

Because one year of a physician's billed charges are used to set the next year's Medicare approved rates, the CPR system has obviously not been neutral with respect to physicians' billed charges in the succeeding years of its implementation. An alternative to a neutral payment system might be designed to take advantage of Medicare's substantial potential market power with respect to physicians services. Further, such a system might be much simpler to understand for both the physicians and the beneficiaries.

In the sections that follow, the notions of fee schedules are reviewed. The chapter begins with an explanation of the concepts of fee schedules, relative value scales (RVSs), and procedural coding and terminology systems. Also discussed are the potential uses of a fee schedule for reimbursement purposes. The initial issues arising prior to the implementation of any fee schedule are enumerated, as are issues revolving around the problems of maintenance of a fee schedule via updating or occasional appropriateness checks for possible recalibration. Two somewhat arbitrary categories for methods of constructing particular fee schedules are then discussed: 1) relative-value-based methods, and 2) "competitive" methods. The concluding sections of the chapter address the potential impacts of all of the various fee schedule options and review the prospects for fee schedules as a whole.

THE CONCEPT OF FEE SCHEDULES

A fee schedule can be viewed as an exhaustive list of physician services in which each entry is associated with one specific monetary amount. (Two basic variations on the fee schedule theme involve possible multiple monetary amounts for each service depending on the geographic location or specialty of the involved physicians.) A concept closely related to a fee schedule is that of an RVS. An RVS is an exhaustive list of physician services in which each entry is associated with one specific numerical value that expresses the value of the service in question relative to an arbitrary numeraire. An RVS can be converted to a fee schedule by multiplying the relative value of each service by a monetary conversion factor.

An ordering sequence for the list of services is generally provided by a procedural coding and terminology system, a taxonomy of physician services. The most commonly used procedural coding and terminology systems are: 1) the various versions of the California Relative Value Studies; 2) (510) the system primarily used for diagnostic coding but which also includes the procedural coding scheme used in Medicare's prospective hospital payment system; and 3) the Current Procedural Terminology, 4th Edition (CPT-4) (85) the coding system developed under the auspices of the American Medical Association and currently incorporated in the HCFA Common Procedure Coding System (HCPCS).[1]

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[1] By HCFA policy, by July 1984, all carriers were to have converted to the use of HCPCS for all Medicare Part B data to be submitted to HCFA central office in Baltimore.

Fee schedules offer a method of fee determination within the context of fee-for-service reimbursement that can address many of the problems currently perceived within CPR. These include such issues as variations in approved charges, unpredictability of payment amounts, confusion on the part of beneficiaries and providers, and limited Government control over rising price levels for physician services.

Because under a fee schedule a single fee is paid for a particular service to any physician (within a particular peer group in a particular jurisdiction), variations in approved charges are eliminated within that peer group and jurisdiction. In an extreme form, a national fee schedule that did not recognize specialty distinctions for payment purposes could provide a single payment rate for a specific service for all physicians in all parts of the country. There would be no variations in payment. More likely forms of fee schedules would involve some geographic distinctions for payment purposes, such as fee schedules applicable on a statewide or carrier-wide basis. Under some circumstances, specialty distinctions for payment purposes could be a feature of fee schedules.

The establishment of a set of fee schedules could also highlight differences in payment levels for various services, such as those observed between procedural and nonprocedural services. Because the relative approved charges for any two specific services would be identical across physicians given a fee schedule, it would be easier to identify potential discrepancies in fees in the schedule compared to discrepancies under CPR. In implementing or updating a fee schedule, one could resolve such discrepancies. Discrepancies in payment for a particular physician service by site might also be easier to resolve under the administration of a fee schedule.

Because the payment amount provided as a Medicare benefit for a particular physician service could be known in advance for both beneficiaries and physicians, there would be much less uncertainty about beneficiary coinsurance liability and physicians' expected receipts from Medicare carriers. As a result, one would expect much less confusion on the part of beneficiaries with respect to their financial obligations. Knowing their unassigned liability in advance would also enable beneficiaries to become better buyers. Under such a system, physicians' billings could proceed on a more expeditious basis under fee schedules because payment amounts could be better known in advance.

Given a fee schedule system of payment, a single parameter could be used to revise the level of payments to take account of changes in the costs of producing physician services and perceived changes in the value of those services. This is in sharp contrast to the fee revisions under CPR, which result from the interactions of individual physicians' billing decisions, changes in medical practice and medical practice costs, and departures, if any, from relative values observed in Medicare localities in calendar year 1971. Even under a relative value system with multiple conversion factors for the various types of physician services, there would be potentially greater control of increases in the prices paid by Medicare for physician services.

Uses of Fee Schedules for Reimbursement Purposes

Three alternative approaches to the use of fee schedules for the purpose of determining reimbursements can be identified:

- a schedule of maximum allowances,
- a schedule of absolute reimbursements with no permitted additional patient liabilities, and
- a schedule of Medicare reimbursements without regard to potential patient liabilities.

These alternatives are not mutually exclusive. Furthermore, any or all of these alternatives might also be combined with an expenditure cap, which might be implemented by either disallowing claims above the cap or by discounting claims until there was a reasonable expectation that the cap would not be exceeded.

In effect, Medicare's current reasonable charge process operates as a schedule of maximum allowances, with individual maximum allowances available for each procedure provided by any physician (or physician practice). For physicians whose customary charge for a particular procedure exceeds the adjusted prevailing charge, the value of the maximum allowance is equal to that of the adjusted prevailing charge. For a physician whose customary charge is at or below the adjusted prevailing charge, the value of the maximum is equal to that of the customary charge. For all physicians, however, for any claim submitted with a charge below the lesser of the customary or prevailing charge, the approved charge is the submitted charge. In calendar year 1984, 18.3 percent of all Part B claims were submitted at or below the CPR limits (535).

Alternative Reimbursement Approaches

A fee schedule implemented as a schedule of maximum allowances would set upper bounds on approved charges for specific services. For example, were the fee schedule amount for cataract excisions with intraocular lens insertions to be established at $1,500, the approved charge for a physician who billed for that procedure would be set at the lower of the submitted charge or $1,500. As under the current system of coinsurance, beneficiaries would have an incentive to secure needed physician services from a provider who would bill for an amount lower than the approved charge. This incentive would be diminished for those beneficiaries with Medigap coverage that "filled in" coinsurance amounts.

A fee schedule implemented as a schedule of absolute reimbursements with no additional patient liabilities permitted would involve a significant departure from the present Medicare system of physician reimbursement. This option would involve a form of mandatory assignment—in effect, a prohibition of physician billing above the Medicare allowance. Under such a system a physician would receive only that portion of the fee schedule amount above the coinsurance (and any deductible) regardless of the submitted charge. The submitted charge, if any, might be disregarded; only the procedure code for the service would be used in determining the appropriate reimbursement.[2] Other things being equal, physician price under such a system would have no effect on beneficiaries' decisions with respect to individual physicians since there would be no difference in beneficiary liability for specific services.

The third alternative with respect to establishing reimbursement amounts from a fee schedule would involve an even more radical departure from the present Medicare system of determining approved charges for physician payment. A fee schedule implemented as a schedule of Medicare reimbursements without regard to potential patient liabilities would in effect be universal nonassignment. This new arrangement would involve payment of only the fee schedule amount (above the deductible and any coinsurance) regardless of the physician's submitted charges. (Although physicians might still bill carriers directly, there would be no implication that the approved charge in such cases would necessarily be payment in full.) Because the beneficiaries would be responsible for paying for the difference between the physician's bill and the Medicare allowance under this kind of system, beneficiaries would have a substantial incentive to seek physicians with low submitted charges for needed services. Such a system might also be implemented to allow a beneficiary to keep any difference between the fee allowed by the schedule and any lower fee charged by and paid to the physician.

Expenditure Cap

Any or all of the three methods of using a fee schedule for Medicare reimbursement might be modified to implement an aggregate expenditure cap for physician services. One form of such a system has been employed under the health insurance program in the Canadian province of Quebec (388). Under an expenditure cap system, reimbursements might be made at some fraction of the relevant amount as long as there was a possibility that the expenditure cap might be exceeded. Most likely (and comparable to the compensation schemes used by some individual practice associations (IPAs)) would be a discounting program involving payments at, say, 85 to 95 percent of expected amounts with rebates to physicians (based on billing volume) if the expenditure cap exceeded total interim payments. A somewhat unlikely version of an expenditure cap might involve payments at 100 percent of the expected level until the cap had been reached, after which no claims would be paid. (It is alleged that some Medicaid programs, in effect, employed such a system by deferring until their next fiscal year payment on all current year claims starting from the time that their expected budget limit had been reached.) Another alternative might involve payments at 100 percent during the initial quarter of the year with quarterly downward adjustments, if needed, based on projections of anticipated claims in succeeding quarters. Unfortunately, this might have the effect of producing "gaming" behavior by physicians with patients who presented afflictions during the last quarter of the year. In this regard, in Quebec it is reported that some physicians at or near their billing limits join "billing-pools" to take advantage of unused billing quotas of other colleagues at the end of a billing period (388).

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[2] Under a comparable system used for pharmaceutical reimbursement under the Medicaid program in California, providers billed for specific services often without specifying a charge, since that charge was irrelevent with respect to reimbursement.

One other issue that might arise in the implementation of an expenditure cap implemented through discounting would involve beneficiary coinsurance and nonassigned liability. If beneficiary coinsurance were calculated on the basis of the discounted approved charge, there would be a net decrease in expected beneficiary liability and, possibly, an increase in beneficiary utilization in response to the change in price. Other things being equal, a budget neutral proposal would retain beneficiary coinsurance liability with respect to the undiscounted charge. A more serious problem might be anticipated with respect to nonassigned liability under a discounting system. If physicians collected from the beneficiaries the full difference between their submitted charge and the discounted approved charge, the later rebates, if any, would involve double payments to physicians since the rebate amount would already have been collected from the beneficiaries. Further, even if beneficiaries were "indemnified" in this process by being reimbursed for the entire undiscounted approved charge on unassigned claims, under this system physicians would have an increased incentive to not accept assignment. Having the certain beneficiary payment in lieu of the potential rebate would minimize the "loss" to the physician that might occur if the expenditure cap were exceeded.

Initial Implementation Issues

In addition to issues with respect to the ability to administer a fee schedule *on a continuing basis* (to be addressed later in this chapter), there are a variety of issues that relate to problems attendant solely to the *initial* implementation of a fee schedule. Such issues include the following:

- who might participate in the development of a fee schedule (specifically involving antitrust related prohibitions with respect to physician organizations);
- whether the method of fee schedule construction needs to be the method of fee schedule maintenance over time; and
- how to handle the transition from CPR to a fee schedule.[3] The last issue prompts the question of exactly how close to a fee schedule is the current distribution of approved charges?

The Antitrust Issue

As a purely mechanical exercise, any Medicare carrier could be instructed to estimate average approved charges for each service that it has reimbursed. A listing of the resulting charges by service could be used as a fee schedule. However, because of technological change in medical practice this fee schedule would soon become inadequate. Continuing input from physicians would be necessary to update the fee schedule, both with respect to new procedures and to changes among the established ones.

Physician input in the development of a fee schedule clearly is useful and probably is essential. The method through which that input is obtained, however, may be suspect because of possible violations of one or more of the antitrust statutes. It is hard to imagine physicians' establishing a fee schedule as something other than pricefixing. In fact, the Federal Trade Commission (FTC) has sued several medical associations with respect to their actions involving the *publication* of relative value studies or participation in fee review efforts. FTC has also issued a number of advisory opinions that have had the effect of circumscribing concerted physician action with respect to the development of fee schedules. The effect of these opinions is not to prohibit physician input into the development of fee reforms. Individual physicians and medical societies may not negotiate fees but may discuss reimbursement issues—including relative values—with third-party payers without running afoul of antitrust prohibitions (93).

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[3] Basically, there would be few administrative difficulties in converting from CPR to a fee schedule. The major complication would be what policies, if any, would be used in the case of physicians whose approved charges would be reduced following the conversion. Previous physician payment reform proposals have suggested the use of "hold-harmless" measures that, in effect, would freeze individual physician's approved charges rather than reducing them until the time when increases in other charges brought the frozen charges into proper alignment. Another alternative would involve blending the new rates with the established ones as has been used in the conversion of hospital payment policies under the prospective payment system.

FTC has modified its consent orders with several physician associations to note specifically that a physician association is not prohibited from "providing information or views, on its own behalf or on behalf of its members, to third party payers concerning any issue, including reimbursement" (554). What has been proscribed by FTC orders are agreements between physician associations and third-party payers, "whether extracted by negotiation or coercion, and any conduct in furtherance of such a result" (554).

At the outset, it should be noted that the Medicare program (and any State Medicaid program) cannot be held to be in violation of antitrust prohibitions. If the Health Care Financing Administration (HCFA) unilaterally issued a fee schedule without physician input or if it adopted without modification the 1974 California Relative Value Study, there would be no violation. There is a "deemed repeal" of the antitrust acts for organizations established through the direct actions of the U.S. Congress. State actions (such as those that might involve Medicaid) are also exempt (377).

Procuring physician aid even in a legal fee schedule development process, however, might be somewhat convoluted. The antitrust laws were instituted to prohibit "unreasonable" restraints on trade and competition (377). The drafters of those acts can be presumed to have believed that vigorous competition among many sellers would be the preferred state in any market because a system of competition would foster efficiencies unless restricted by private agreements or actions. However, that competition in the (physician) market might not produce good results is, in and of itself, not an acceptable antitrust defense. That the alternative, for example, to a fee schedule "competitively" derived from bilateral monopoly negotiations between a private market insurer and a medical society might not involve perfect competition is also not relevant. Therefore, that physicians might perceive an agreement to cooperate in the development of a relative value scale —much less a fee schedule—to be an antitrust violation might inhibit needed physician cooperation even though many types of physician contributions to such an effort would not be perceived by FTC itself to be potential antitrust violations.

Three ingredients are needed to prove an antitrust violation: 1) there must be an agreement between two or more otherwise independent parties (usually in the same line of business); 2) the agreement must restrain trade or competition; and 3) the agreement must be "unreasonable" in terms of its effects on competition (267). An illegal agreement would be one that suppresses or destroys competition, not merely an agreement that regulated the behavior of the parties concerned while promoting competition.

FTC has promulgated its judgment that RVSs for physician services may have anticompetitive consequences including the following (554):

- establishment of price relationships without regard to quality, efficiency, or demand differences;
- fragmentation of billing categories, with separate charges for individual services resulting in higher prices;
- concerted or interdependent adherence to relative value scales by physicians; and
- establishment of a "starting point" from which collusion may occur.

In addition, FTC also noted in its advisory opinion to the American Society of Internal Medicine (ASIM) that an agreement by ASIM's members to adhere to its proposed "relative value guide" would do the following (556):

- tamper with market pricing structures;
- pose a danger of higher prices with respect to some medical services;

- stabilize prices artificially; or
- restrict output of certain services, viz., procedural services, and possibly restrict the output of nonprocedural services as well.

The major objections involve the possible effects on the price structure in the markets for physician services.[4] In fact, any relative value scale adopted by Medicare would likely find use in the private market by both physicians and other health care insurers. Physicians, insurers, and health care financing researchers continue to use the California Relative Value Study even though its publication has been enjoined by FTC since 1979.

Should HCFA initiate fee negotiations or request or be granted congressional authorization to conduct fee schedule negotiations with one or more medical societies, the implied repeal of antitrust violations would be effective. However, were HCFA to issue a solicitation in the form of a Request for Proposals for an RVS, some medical societies that considered responding would be unlikely to respond because they might consider themselves to be in danger of being sued by FTC or a competing physician association for violating antitrust prohibitions.

Implementation v. Maintenence

Clearly, any particular method of creating a fee schedule could be replicated any number of times as needed to adjust for changes over time. Because of this, it might be possible to establish a fee schedule system for which the method of updating fees was identical with the method of original implementation. An easy example might be the use of one year's average submitted charges to estimate a next year's fee schedule. Some methods, however, do not lend themselves to easy or at least inexpensive replication, viz., empirical estimates of resource costs associated with specific procedures. In such cases, replication as a means of updating might imply a very expensive system—perhaps, therefore, an infeasible system.

Replication, however, is not the only means of updating. The Medicare Economic Index (MEI), for example, which is used in the process of updating Medicare prevailing charges, could be used to update a fee schedule regardless of the process used to derive that schedule. Other price or cost indexes might also serve this function. Use of an index might allow for the establishment, for example, of an RVS through a *one-time* physician consensus development process for each procedure or set of procedures. This process would not have to be repeated every year. Replication of the original process for the reconsideration of relative values (or relative fees) might be necessary only to establish levels for newly introduced procedures or for other practice changes that were believed to warrant such reconsideration.

A varied mix of methods might be used to improve the rationality of any particular fee schedule over time. For example, one might initially change to a Medicare fee schedule by having carriers estimate average approved charges for each procedure to establish a baseline RVS. For payment purposes, this RVS might be converted to a fee schedule that might be updated each year using the MEI. New procedures might be given interim payment rates following a consensus development process. Final payment rates could be established following estimations of resource costs, perhaps 18 to 36 months after the interim rates had gone into effect. Finally, the members of an independent physician payment review commission might review and recommend changes to correct any interjurisdictional or interspecialty differences brought to their attention.

Transition From CPR to a Fee Schedule

If a particular fee schedule were identified and deemed to be desirable, an initial problem would involve the transition from the current system to that schedule of fees. The expectation under the current system is that for approximately no less than 25 percent of the Medicare volume for any procedure, the approved charge is equal in value to that of the adjusted prevailing charge, with the rest of the distribution of charges at a variety of lower levels. For some time, however, there has been speculation that Medicare payment levels were moving in the direction of de facto fee schedules because of the implementation of the MEI. To the extent that this phenomenon has occurred, a transition to a de jure fee schedule might be less of a problem.

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[4] The fragmentation issue arises in the evolution of procedural coding and terminology systems; it is not a function of RVSs. The output restrictions referred to in the FTC's advisory opinion to ASIM involve procedural services most likely performed by physicians who are not internists. One infers from the FTC opinion that surgeons, for example, would rationally reduce the supply of their services if their payment rates declined. If ASIM members or other physicians, however, were successful in raising the prices of their own services attendant to publication of their relative value guide, buyers might reduce their purchases of those services (555).

By the early 1970s, it was clear that the use of one year's submitted charges to establish the next year's customary and prevailing charges provided an incentive to accelerate fee increases. As a result, there was a concern expressed that Medicare fees were fostering inflation in medical care prices, rather than merely following changes in the costs of providing physician services. To attempt to ensure that increases in Medicare approved charges followed rather than led inflation in physician fees, legislation was passed to institute a procedure to cap prevailing charges. The level of the cap would be changed each year through the use of an "economic index," which explicitly estimated both increases in the costs of providing physician services[5] and increases in general earnings levels. The MEI was mandated in section 223 of the Social Security Act Amendments of 1972 (Public Law 92-603). Because of the imposition of the Economic Stablization Program in 1972, the provisions of the MEI were not implemented until July 1, 1975.

Prevailing charges in effect at the passage of the legislation provided the initial caps on approved charges. Thus, the base year for the MEI was July 1, 1972 through June 30, 1973, fee screen year 1973.[6] In any subsequent fee screen year, the "adjusted" prevailing charge for any service would be the lower of the 75th percentile of the distribution of volume weighted customary charges—now known as the "unadjusted" prevailing—or a value equal to the product of the prevailing charge from fee screen year 1973 multiplied by the current value of the MEI. For example, for a procedure that had a fee screen year 1973 prevailing charge of $100 and for which the fee screen year 1982 "unadjusted" prevailing charge was $185, the "adjusted" prevailing charge would have been $179—the value of the MEI times the base year prevailing charge (116).

From the MEI base year through June 1983, physician prices as measured by the Consumer Price Index (CPI) increased 258 percent while the MEI increased 206 percent. Because of this disparity, it has been assumed that the MEI might ultimately transform the CPR system into a fee schedule based on the fee screen year 1973 prevailings. However, because the particular limit (submitted, customary, prevailing, or other charge) used to establish the approved charge for any physician bill to Medicare has not generally been recorded by carriers during the payment process until recently, there has never been a complete national source of statistics on the constraints imposed by the MEI. Thus, it has been impossible to distinguish whether an MEI induced fee schedule will be achieved or merely approached asymptotically.

The available evidence is equivocal with respect to how close the current system is to a fee schedule. For some years, the *Medicare Directory of Prevailing Charges* (532) has included an indicator to identify for 110 common physician services those prevailing charges that have been established through the use of the MEI. In fee screen year 1984, 55 percent of all prevailing charges listed in the *Directory* for general practitioners and 62 percent of the procedures for specialists were established by the MEI (532). These numbers, however, have been relatively stable if not declining since at least 1981, a pattern that is not indicative of the imminent coming of fee schedules for all services.

Using the MEI indicators and other data collected for the fee screen year 1984 *Directory*, the Congressional Budget Office (CBO) estimated that 60 percent of approved charges in the Medicare program are priced at levels determined through the MEI. They estimate that by 1990, this will increase to 70 percent. Those estimates, however, are probably somewhat upward biased because of peculiarities in the data definitions in the instructions to Medicare carriers for collecting these data.[7]

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[5] The components of physician practice expenses that are included in the MEI are staff salaries, rental costs, automobile expenses, supplies, professional liability insurance, and "all other" costs.

[6] Approved charges for that time period had been established through statistical manipulations of physician charges submitted during calendar year 1971.

An alternative source is an analysis of calendar year 1983 carrier data from the State of South Carolina (247). This analysis of data on physician services excluding anesthesiology showed that 43.2 percent of approved charges were established at the level of the adjusted prevailing. Because the adjusted prevailing is the lower of the MEI cap or the actual 75th percentile of the distribution of volume weighted customary charges, 43.2 percent must be considered an upper bound estimate of the impact of the MEI in that State. In addition to this aggregate estimate, Juba estimated comparable percentages for a variety of types of services. These ranged from 65.2 percent and 64.6 percent for office and hospital visits, respectively, to 38.9 percent and 30.3 percent for radiology (professional component only) services and surgery, respectively. These statistics suggest that the MEI may be closer to producing a fee schedule for physician visits and other nonprocedural services than for surgeries and some of the more technical services. It does not suggest that a fee schedule is at hand as a result of the MEI.

If this interpretation is correct, however, transition to a fee schedule may become both easier and somewhat more complicated. The ease in transition would be found in the problem of establishing fees for the office visits and hospital visits, services responsible for significant fractions of Medicare expenditures. To the extent that there is relatively little variation in approved charges with respect to individual visit types, intraspecialty disputes over appropriate prices may be lessened. Standard deviations with respect to average approved charges for the four most common office and hospital visits (in South Carolina) were found to be between $2.35 and $3.40 (247) (see table 5-1). If the distribution of approved charges is roughly normal, approximately two-thirds of the approved charges for any of those visits are within $3.40 or less of the average. In fact, 85 percent of the limited followup office visits exhibited approved charges within 25 percent of the State mean approved charge across all specialties, and 94 percent were within 10 percent of the relevant specialty mean. Thus, establishing a fee schedule amount at the average approved charge would not imply substantial changes in unit payments.

On the other hand, standard deviations for some of the surgical procedures, for example, are 10 to 100 times greater than those of the most common visits. This relationship implies that for a particular patient or—for some physicians—all patients, a single fee schedule amount, even if based upon the average, might involve a nontrivial loss of unit revenue. Such a prospect might cause a physician to change his or her clinical decisions about the patient's therapy or his or her entrepreneurial decisions about assignment or participation in the Medicare program.

To the extent that this problem exists, it may be advisable to phase-in a change to a fee schedule. In the past, proposed Medicare physician payment changes have been designed to be phased-in through the use of "hold-harmless" provisions. Under this approach, the payment for a particular procedure to a physician whose approved charge would otherwise exceed the fee schedule amount is frozen at the previous approved charge level until such time as approved charge increases for other physicians bring the fee schedule amount to that level. This approach has the effect of temporarily rewarding physicians whose fees are above average. If the expenditures for those

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[7] Data for the *Directory* submitted by the carriers for each of 110 services include: the adjusted prevailing charge, the 50th and 75th percentiles of the distributions of volume weighted customary charges, and the total number of services whose prices were used to establish the prevailing charge. By assuming that the distribution of customary charges is statistically normal or near normal, one can estimate the actual percentile of the prevailing. The total units of service can then be used to aggregate expenditures over the entire set of procedures. This is basically the CBO procedure.

Because the 50th and 75th percentile estimates are established by identifying the lowest customary charge that is no less than (i.e., equal to or *greater than*) the desired percentile, the resulting CBO percentile estimates will be biased upward by varying degrees. Further, to the extent that procedures introduced since 1971 have been less affected by the MEI, the 110 procedures included in the *Directory* will be less representative of the distribution of all physician services provided to Medicare beneficiaries, again contributing an upward bias to the estimates. Finally, of the 110 procedures included in the *Directory*, inpatient surgical procedures tend to be underrepresented, because the surgeries included in the *Directory* are a much smaller proportion of approved charges for all surgeries than the comparable proportion represented by the specific types of physician visits included in the *Directory*. Because recent evidence (247,294) suggests that visits are relatively more constrained by the MEI than surgeries, the underrepresentativeness of surgeries in the *Directory* will impart an additional upward bias to the resulting estimates of MEI impact.

Table 5-1.—Mean Approved Charges and Standard Deviations for Selected Medicare Services,[a] South Carolina, 1983

	Percent of total approved charges in State	Mean approved charge	Standard deviation
Office visits:			
90080 Comprehensive: established patient	1.03%	$ 42.48	$ 15.47
90020 Comprehensive: initial patient	0.81	38.11	17.53
90060 Intermediate: established patient	1.37	18.23	3.68
90050 Limited: established patient	9.57	12.83	2.35
90040 Brief: established patient	0.72	11.54	2.74
Hospital visits:			
90220 Comprehensive examination	4.56	54.63	13.76
90250 Limited: followup	11.86	16.26	3.40
90240 Brief: followup	0.53	13.99	2.59
Other medical procedures:			
93547 Selective angiography	0.67	563.27	46.64
90620 Consultation: initial comprehensive	1.85	63.01	10.91
90630 Consultation: initial complex	0.53	63.01	9.43
99174 Critical care: extended	0.65	39.69	10.53
99173 Critical care: intermediate	0.73	36.56	7.97
93000 EKG	1.56	23.27	3.20
Surgery:			
33513 Quadruple bypass	0.65	3,691.17	175.67
33512 Triple bypass	0.92	3,617.33	344.82
27130 Athroplasty	0.66	2,009.57	257.69
66980 Lens prosthesis: cataracts	7.15	1,335.70	139.51
27244 Femoral fracture	0.89	1,003.70	93.50
44140 Colectomy	0.67	984.54	123.80
27236 Femoral fracture: proximal end	0.52	835.26	55.86
66920 Cataract removal: extraction lens	0.61	794.57	40.62
52601 Transurethral resection of prostate	2.44	792.16	35.72
47605 Cholecystectomy with cholangiography	0.69	702.04	72.98
43239 Upper G.I. endoscopy with biopsy	0.52	229.48	34.54
43235 Upper G.I. endoscopy	0.72	208.59	35.79
Radiology:			
74240 Upper G.I. tract and exam	0.51	31.12	3.22
77405 Therapeutic: intermediate	0.51	24.10	3.05
71020 Two-view chest X-ray	1.34	13.76	1.44
71010 Single-view chest X-ray	1.01	9.71	.77
Pathology:			
82947 Glucose test	0.53	5.59	1.04
81000 Urinalysis	0.70	3.79	.48

[a] Procedures that account for at least 0.5 percent of approved charges in the State.

SOURCE: D. Juba, "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," prepared for the U.S. Congress, Office of Technology Assessment, Washington, DC, November 1985.

"above average" fees are used, in effect, to reduce the increases allowed for other physicians, the hold-harmless approach penalizes those physicians whose fees were below average. An alternative would involve blending fee schedule payments with CPR payments during a transition period. This approach allows for a faster transition to single payment rates than would "hold harmless" provisions, while reducing the magnitude of any windfall losses or gains that might attend an "overnight" implementation of a fee schedule.

Updating, Maintenance, and Appropriateness Checks

As indicated earlier, the method of fee schedule origination need not be the method of updating. For this reason, relatively costly methods of creating fee schedules or RVSs could be considered to take advantage of any of their potential design features. (Replication could remain a method of updating either on an annual basis or for less frequent or partial recalibrations.) In the absence of replication, there are two general problems that can be anticipated in updating a fee schedule: 1) identifying appropriate aggregrate changes in the level of fees, and 2) identifying appropriate changes in relative fees within the schedule. (One might note that these are the two primary functions given to the Prospective Payment Assessment Commission (ProPAC) under Public Law 98-21, which established the prospective payment system for Medicare Part A.)

If the market for physicians' services were perfectly competitive and if CPR did not contain incentives to raise billed charges in one year to increase approved charges in the next, CPR would have a theoretical advantage with respect to maintenance of payment levels. Other things being equal, if the costs of practice of all physicians rose, billed charges would also rise appropriately to reflect input cost increases, and approved charges would follow. If the costs of producing a particular physician service rose more than other services, one should observe a greater increase in approved charges for that service under CPR. However, it has been noted that CPR's incentives can influence billed charge levels. Further, although competitive, the market for physicians services is not perfectly so. Given a conversion to a fee schedule by Medicare, some other alternative to sole reliance on the prior year's billings would have to be adopted for fee schedule updating.

Aggregate Changes Over Time

The model of a perfectly competitive market can be used to examine how prices should change over time in an efficient economy. Such an examination can provide guidance in the development of policy for updating a fee schedule. Specifically, in a perfectly competitive market, suppliers would behave as if they were minimizing the costs of producing their services for any level of total output. Increases in input prices would be reflected in changes in suppliers' cost functions,[8] from which one could infer the price increase that would be anticipated in a competitive market with a fixed level of output. The mathematical results of this exercise are the following: the expected proportional change in cost for a cost minimizer given changes in input prices is equal to the weighted sum of proportional changes in input prices, where the weights are the shares of total cost of the various inputs. Hence, one could develop an index to estimate the most "efficient" increase in fees that would be appropriate given observed increases in physicians' costs of practice.

There are two available indices that relate to physicians' costs and prices. They are the Professional Services Index of the Medical Care Component of the CPI and the MEI. The former is somewhat better known to the general public and has been computed on a monthly basis longer than the Medicare program has been in existence. It is based on 79 somewhat general physician services,[9] the billed charge for which is requested on a monthly or bimonthly basis from a fixed cohort of roughly 650 physicians located in urban areas across the United States. For historical reasons, the services of ophthalmologists are included in a separate vision care index, and the services of anesthesiologists and pathologists are included in the Hospital Price Index subcomponent of the CPI.

For the purpose of updating a fee schedule, the CPI professional service subcomponent does have the advantage of being an index of fees that physicians charge their patients. Because it is based on a fixed basket of services, for a fixed cohort of physicians who are asked prices charged to *private-pay* patients, it may even be biased downward as an index of physician fees in general. In any case, it does not directly reflect changes in the costs of physicians' practices.

The MEI was mandated by the Social Security Act Amendments of 1972 (Public Law 92-603) in response to concerns that increases in Medicare approved charges led rather than followed inflation in physician fees. To break this pattern, the Senate Finance Committee had proposed to limit increases in Medicare prevailing charges by comparing the prevailings to an index based on increases in the costs of producing physician services and increases in general earnings levels. The Finance Committee did not specify the exact form of the index, but it did suggest that the weighted sum of the price changes for various practice inputs might be an acceptable approach. The notion is common sensical: if the prices of 40 percent of one's inputs are increasing by 10 percent and the remainder are increasing by 15 percent, then on average input costs are increasing by 13 percent (13,251).

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[8] A cost function denotes the mathematical relation between input prices and the minimum cost of production of a particular level of output for a particular production process.

[9] The exact number of specific services included is much larger, since each physician practice in the sample provides his or her billed charge for a specific service within one or more of the somewhat general categories.

Although neither the Senate staff nor the Social Security Administration staff who developed the MEI (118) began with a cost function analysis, the index that was developed is a closer analog than the CPI to a predictor of the price increases expected from efficient physicians who faced increasing input prices. There are a number of refinements that might be introduced in the MEI, particularly with respect to the question of productivity changes, but the existing MEI might be an appropriate index for use in updating the general level of fees in a Medicare fee schedule. In an RVS-based fee schedule, one would simply multiply the change in the MEI by the existing conversion factor to obtain the appropriate increase in the conversion factor.

Recalibration

The index approach to fee schedule updating is administratively easy, but it embodies the implicit presumption that relative fees within the schedule are correct and remain correct. At this point, one could reprise the justifications for locality and specialty differentials, restate the arguments for using the payment system to encourage the provision of some services and to discourage others, and review the appropriate way to establish and monitor approved charges for new procedures that enter the repertoires of a significant number of physicians. Because the circumstances that underlie these issues are dynamic, one would want the fee schedule system itself to have a mechanism for responding to such dynamics.

For example, if the Medicare approved charge for a particular service were $25 in Manhattan and $20 in northern New Jersey, there could be a periodic review of the need to continue such a differential. Similiarly, specialty differentials for specific services could be reviewed. The approved charges of new procedures not only could be reviewed over time to verify efficiencies that could be expected to evolve, but the approved charges of any procedures that are replaced by new ones could be examined to determine any continued justification for paying different prices for services with equal results.

Keeping Fee Schedule Levels and Capitation Levels Commensurate

Within the framework of the fee schedule as a method of payment for physician services, aggregate price levels and relative price levels remain the two basic issues. However, even if fee-for-service continues as the predominant method of payment, whether by fee schedules or not, there are a substantial number of Medicare beneficiaries whose physician services will be provided under capitation arrangements, such as competitive medical plans (CMPs) or health maintenance organizations (HMOs). Comparisons of the expenditures for physicians' services under the two systems may provide another means of assessing the appropriateness of fee levels under fee-for-service. If there were HMOs that maintained disaggregated data on their costs of treating specific ailments on an ambulatory basis, such costs might be used to examine approved charges for the physician services used in those treatments.

The comparisons might also be used to examine the appropriateness of payments made under prepayment arrangements. For example, in California it was recently observed that the State pays more per Medi-Cal (Medicaid) recipient enrolled in HMOs than it does for recipients who receive services in the fee-for-service sector (74).[10] Nonetheless, because the level of costs of CMPs may rise to the level of prepayment amounts, one might justifiably use fee schedule payment level changes to assess proposed changes in prepayment levels.[11]

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[10] This appeared to be a result of State stringency in raising fee levels for fee-for-service providers rather than as a result of HMO inefficiencies.

[11] Under a worst case scenario, average adjusted per capita cost (AAPCC) levels for competitive medical plans (CMPs) would be overestimates because of beneficiary selection favorable to the CMPs. CMP costs, however, could rise even further as they compete for healthy patients by offering additional benefits or amenities. AAPCC levels based on non-CMP enrollees would also rise due to exacerbated adverse selection. As a result, neither CMP costs nor aggregate expenditure levels for the nonenrolled beneficiaries would be an appropriate guide to future CMP prepayment levels.

APPROACHES TO THE INITIAL CONSTRUCTION OF FEE SCHEDULES

For the purpose of discussion, methods to construct fee schedules will be partitioned into two categories. The first includes all approaches based on the concept of an RVS—whether a charge-based, resource-cost-based, or consensus RVS. The second labeled "competitively" developed fee schedules, includes four methods that for the most part are based on either implicit or explicit use of market mechanisms to develop a set of fees. The first two involve unilateral buying policies that might be adopted by the Medicare program in developing a fee schedule. The third involves soliciting for competitive bids from physicians or other suppliers of physician services from which a fee schedule would be constructed. The fourth alternative involves direct negotiations between the Medicare program and physician groups to explicitly develop a fee schedule.

Relative Value Scales

An RVS, in and of itself, is not a fee schedule. Given a procedural coding and terminology system listing all physician services, an RVS is a cardinal ranking of each of those services with respect to some conception of value.[12] For example, a total hip replacement might have a ranking of 40.0 compared to the ranking of an inguinal herniorraphy of 9.0 (76). Each service's ranking allows an ordering of that service *relative* to all others. The difference between any two services' rankings in some sense is a measure of a difference in *value* (192).

Conversion of an RVS to a fee schedule is relatively straightforward. Assigning a monetary conversion factor to a relative value unit allows the computation of a fee for any service: the fee is simply the product of the service's relative value in units multiplied by the conversion factor. Alternately, there might be different conversion factors associated with different types of service. Thus, two services might have the same relative value, but be assigned different fees. The health insurance programs in France use this type of system (115).

RVSs for physician services are a relatively recent phenomenon. The Casualty Actuarial Society developed RVSs for commercial insurers in the 1940s (430). The best known of the RVSs are those that were published by the California Medical Association. Separate editions were published in 1956, 1957, 1960, 1964, 1969, and 1974. (As noted above, the California Medical Association was enjoined from publishing any further editions in 1979.) Other professional societies, such as the American Society of Anesthesiologists and the American College of Obstetrics and Gynecology, have also developed RVSs.

The Value in Relative Value

The concept of value embodied in any RVS is important. Differences in the concept to be used may lead to quite different sets of relative values. One might argue that the values in an RVS should reflect differences in the costs of producing the services. This approach would tend to establish RVS based fees to physicians that did not distort their clinical decisionmaking. On average the resulting approved charges would be a constant multiple of estimated costs and there would be no expectation that any one set of services would be particularly encouraged by the payment system. However, even if this type of RVS were to be based on the costs of the most efficient ways of producing the services, there might be an objection that some services of little or no medical benefit to patients should not be valued at cost.

Alternately, therefore, one might argue that values in an RVS should reflect differences in the statistically expected value of a change in health status (compared to not receiving the service) of a patient who receives a particular service. Physicians might be able to acheive some concensus on this issue, although patients' perceptions of the value of physicians services might well be varied, and might differ from those of the physicians, as well as from the values that might be discerned by the Medicare program. In addition, from the latter perspective, the value of a particular service might be placed in the context of all of the other nonphysician services that might be provided in conjunction with the services in question. A service provided in an ambulatory care setting, for example, might be preferred to an apparently equivalent service provided in a hospital because the total cost to the program would be lower.

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[12] The units of relative value for any RVS are arbitrary. Although one might choose a numeraire service (228), the choice of a numeraire service would itself be arbitrary and none of the issues of the California RVS, for example, was based on such a numeraire. The number of RVS units for any service has no meaning except in relation to the number of units of some other service.

Relative values, therefore, could reflect not only the costs of efficient production, including the costs of physicians' time, but also the preferences and costs of patients, the Medicare program, and probably those of society as a whole. It is unlikely that any set of RVSs would meet each of these requirements. (One might argue that, if nothing else, because historical charges represent the resultant of: 1) physician costs; 2) Medicare, insured, and private-pay patients' preferences; and 3) Medicare rules and regulations, the relative values implicit in charge histories are an appropriate source for an RVS.)

As a practical matter, however, there are a variety of ways of constructing an RVS. These methods can be assessed in terms of the derivation of their relative values and possible impacts of their use for establishing a fee schedule. At the outset, it should be noted that attempts to date to compare relative value scales from various sources have found few aggregate differences among alternative RVSs (191,227). Some of those differences, however, may be significant for the choice of RVS or modification of an RVS that might be employed in establishing a fee schedule. Similarity among alternative RVSs strengthens the case for using a relatively inexpensive method of constructing an RVS.

Charge-Based Relative Value Scales

One first option for fee schedules would involve the use of carriers' patient history data to establish an RVS. Estimation of a central tendency measure (mean, median, specified percentile) for each physician service would establish that service's relative value. Based on the total approved charges for all procedures, a single conversion factor would be established that would make the resulting fee schedule budget neutral compared to CPR.

Hadley and colleagues found that the choice of the central tendency measure does not appreciably affect RVS scores (191). This would argue for the use of average charge values, which are mathematically easier to compute than percentiles. If the incidence and magnitude of outliers were found not to be similar across procedures, use of the median charge might replace the use of averages.

Hadley and colleagues examined submitted charges, prevailing charges, and reimbursements for specific procedures and found that the choice of charge measure also had little effect on the resulting RVS scores that might be computed from history data (191). Data used for that analysis included fee screen year 1982 national data from the *Medicare Directory of Prevailing Charges* and 1978 Medicare claims data from the State of California. In light of the recent findings that allowed charges for visits appear to be a smaller fraction of billed charges than for the more technical services (247,294), one might expect that an RVS based on submitted charges would differ from one based on allowed charges, expecially with respect to visits. To the extent that submitted charges reflect current private market values that source would be preferred as a source of relative values.[13]

This option is the only one for which there exists empirical data on any of the effects of a change from the current CPR system. Claims data from the State of South Carolina[14] from calendar year

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[13] Regardless of the choice, approved charges would be used to determine the conversion factor to preserve a budget neutral change to this type of RVS-based fee schedule.

[14] Although the State of South Carolina is relatively small and approved charges per claim in that jurisdiction are 14 percent lower than the national average, its implementation of the CPR system for determining approved charges is not believed to be unrepresentative of all carriers. In March of 1983, for example, the net claims assignment rate in South Carolina was 56.7 percent compared to 53.2 for the United States as a whole (530). In the first quarter of fiscal year 1983, the approved charges as a percentage of billed charges in South Carolina were 78.1 percent and 76.2 percent, respectively, on assigned and unassigned claims. The comparable U.S. statistics were 76.1 percent and 76.6 percent, respectively. Where South Carolina's claims processing system is different from the nation's as a whole is in its early introduction of the use of CPT-4 as the procedural coding and terminology system for physician services, a system that is now required of all carriers. For that reason, data analysis of potential changes in South Carolina may be representative of national effects that may be forthcoming.

1983 to assess the effects of a change to a fee schedule based on average approved charges without specialty differentials (247). By design, the system was budget neutral, so there was no change in estimated Medicare expenditures. The major effect of the simulated change to a fee schedule was to increase payments to general and family practitioners and to reduce program payments to internists. Payments to surgeons and radiologists were largely unaffected, i.e., total payments for the services of those specialists remained within 1 percent of actual payments under CPR (see table 5-2). With no changes in physicians' assignment decisions following the change to a fee schedule, anticipated total Medicare revenues of physicians would change by smaller amounts than the change in Medicare payments. The reason is that beneficiary costs on unassigned claims would increase for some of the patients of physicians whose approved charges had been reduced.

Juba's examination of aggregate estimated changes in physicians' Medicare revenues showed that for individual physician practices roughly two thirds of all physicians would have observed either no change in Medicare revenues or a change of less than 5 percent (see table 5-3). A total of 6.4 percent of all physicians would observe losses of more than 10 percent percent, including 14.3 percent of all internists. Nearly 10 percent of all physicians would observe increases in excess of 10 percent, including 19 percent of all general practitioners and 11.3 percent of family practitioners, but only 3.8 percent of radiologists and 1.5 percent of all internists (see table 5-3).

Similar results were found by Sulvetta in simulating a fee schedule based on average approved charges using California data from 1980 (455). Total anticipated Medicare revenues for four out of five specialties[15] studied were changed by less than 1 percent; internists' Medicare revenues were reduced by 1.64 percent. Of greater interest is the range of gains and losses within each specialty: 86.2 percent of physicians were found to experience revenues under the fee schedule within 5 percent of their previous experience (with 29 percent of physicians experiencing no change). However, 6 percent of physicians were found to experience gains of more than 5 percent, and 7.7 percent to experience losses greater than 5 percent. The latter group included 12 percent of the internists and 10 percent of the orthopedic surgeons.

Resource-Cost-Based Relative Value Scales

It has long been recognized that sound reimbursement principles require that (physician) payment levels not be greater than needed to procure sufficient, high quality physician services, but also not be less than needed to reflect the costs of *efficiently* producing those services, including a return on physicians' investments in training. Hence there has been interest in the development of a resource-cost-based RVS.

On the face of it, the steps involved in estimating resource costs should be straightforward. One begins with the enumeration of the constituent re-

Table 5-2.—Simulated Percent Changes in Medicare Program Payments Following Conversion to a Fee Schedule[a] From CPR Payment, South Carolina, 1983

	All specialties[b]	General practice	Family practice	Internal medicine	General surgery	Orthopedic surgery	Ophthalmology	Radiology
Office visits	0.0	19.6%	16.6%	−16.5%	1.2%	−6.0%	—	—
Hospital visits	0.0	17.4	11.5	−8.8	6.6	—	—	—
Surgery	0.0	—	—	8.4	0.1	−0.9	0.0	—
Radiology	0.0	—	—	—	—	—	—	−0.1
Pathology	0.0	1.3	−1.8	1.8	0.1	−4.5	—	—
All types of services[b c]	0.0	16.5	11.9	−7.5	1.0	−0.6	0.1	−0.2

—Procedures in the cell account for less than 5 percent of total approved charges for that specialty.

[a] Fee schedule based on statewide average approved charges without regard to physician specialty.

[b] Includes physicians in listed specialties and others.

[c] Includes other medical services; excludes anesthesia.

SOURCE: D. Juba, "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," prepared for the U.S. Congress, Office of Technology Assessment, Washington, DC, November 1985.

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[15] The five specialties were general practice, general surgery, internal medicine, orthopedic surgery, and ophthalmology.

Table 5-3.—Simulated Percent Changes in Physicians' Medicare Revenues Following Conversion to a Fee Schedule[a] From CPR Payment, South Carolina, 1983

	Reductions greater than 25%	−11% to −25%	−6% to −10%	−1% to −5%	No change	+1% to +5%	+6% to +10%	+11% to +15%	Increases greater than 25%
All specialties[b]	0.5%	5.9%	6.5%	21.9%	23.1%	22.3%	10.1%	7.3%	2.5%
General practice	0.0	0.4	1.0	1.0	26.0	33.8	18.7	13.7	5.3
Family practice	0.0	1.4	0.0	2.8	20.9	39.4	24.1	9.2	2.1
Internal medicine	1.0	13.3	13.0	43.5	16.4	8.3	3.1	0.9	0.6
General surgery	0.0	0.9	7.9	29.0	16.4	29.4	6.1	8.4	1.9
Orthopedic surgery	0.0	0.0	1.9	33.7	34.6	15.4	4.8	7.7	1.9
Ophthalmology	0.0	1.0	4.9	22.6	41.2	12.8	7.8	7.8	2.0
Radiology	0.0	0.0	7.6	50.6	14.2	15.2	7.6	3.8	0.0

[a] Fee schedule based on statewide average approved charges without regard to physician specialty.
[b] Includes physicians in listed specialties and others.

SOURCE: D. Juba, "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," prepared for the U.S. Congress, Office of Technology Assessment, Washington, DC, November 1985.

sources that comprise the costs to be measured. These variables can be readily identified. At a very basic level, two categories have been identified: 1) all overhead costs such as salaries, rents, utilities, supplies, professional liability insurance, and other services; and 2) physicians' own time resources. There is a general consensus on the relative total costs of physician and overhead resources within individual physician practices. Net physician revenues have consistently been found to be approximately 60 percent of gross professional revenues. This result has remained virtually constant since the American Medical Association has published data on physician practice costs. HCFA survey data have also been consistent with this results. Comparable data are reported in the journal *Mecial Economics* based on survey data. The most recent findings published in that journal indicate that the median practice expense proportion was 38.2 percent (355). There is not much variation in this ratio among specialties, nor is this ratio much affected by legal form of organization.

The current empirical literature, however, is sparce specifically with respect to resource costs for particular procedures. There has been little or no attempt to assess resource costs for actual practices. Wagner describes the difficulties involved in identifying and collecting data for assessing resource costs (561). She describes it as a "bottom-up" approach since it involves measuring the quantity of each type of input involved in producing each kind of product. Unit prices are also needed for each type of input. The vector product of all of the units of input and the unit prices of those inputs yields an estimate of the costs of the final product.

Crucial assumptions involved are: 1) that the observed level of utilization of capacity (of both equipment and personnel) be optimal, 2) that the organization and technology of the observed settings be optimal, 3) that the proficiency of the performers in the observed settings be optimal, and 4) that the observed quality of services provided be optimal. Any deviation from these assumptions at a minimum would introduce statistical noise into estimates derived from several different practice locations. In fact, violations of one or more of the assumptions would involve comparing different products or different inputs. For example, if measured by the gross professional revenue per patient contact minute, the apparent cost of physician time for a fully occupied physician may appear to be much less than a second physician with an identical income but with some free time for seeing additional patients. In fact, the contrary is the correct view. The opportunity costs[16] for the first physician can be seen as the greater because slack time generates no additional revenue or output of patient services.

Differing quality levels in the estimates obviously involve different products, but even differing technologies used to produce seemingly identical products may also imply different products. Similarly, practitioners of different competencies may also produce "identical" services that are far from identical. In theory this might invalidate any micro-costing study as a guide to more general application, specifically its use in a relative value study. In fact, however, some theoretical compromises are necessary once it is recognized that there is some statistical variation about any measures of average performance that may become available.

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[16] "Opportunity cost" is a concept used in economics generally defined as the return available from the best alternative use of a particular resource. One is told that "there is no such thing as a free lunch," because there are remunerative or at least satisfying alternatives to being treated to an otherwise "free" meal.

Wagner examined micro-costing studies of radiology procedures in two large teaching hospitals, clinical laboratory tests in a British hospital, and six hospital-based obstetrics/gynecology procedures in a large U.S. teaching hospital (561). She did not find a great deal of correspondence between the relative values produced by these studies and the relative values published in the 1974 California RVS. Unfortunately, there was no way to examine the variations in relative values that might have been found through these studies since they were based on such small samples and each of the studies was focused on a different set of procedures.

The most relevant attempt to date to estimate resource costs for physician procedures was the study by Hsiao and Stason for HCFA (227). In this study, data from the Study of Surgical Services in the United States were assembled to estimate average physician patient contact time for a selection of 50 surgical services. The authors estimated total resource cost relative values as the product of estimated average physician time, relative complexity, imputed physician opportunity costs (to correct for differences in the length of specialty training), and relative overhead by specialty:[17]

$$\begin{array}{c}\text{resource}\\ \text{cost-relative}\\ \text{value}_{ij}\end{array} = \text{MD time}_i \times \text{complexity}_i \times \text{opportunity cost}_j \times \text{overhead}_j$$

where i and j refer to the ith procedure and the jth physician specialty, respectively.

This formulation assumes that the average patient contact time estimate is a fairly reliable estimate for all physicians within a specialty; that all sources of variation in required physician skill levels can be accounted for in a single complexity measure; that a physician's opportunity costs are solely related to length of training; and that overhead by specialty is uniformly related to all services within that specialty.

The simplifying assumptions were necessary for any estimates to be produced. Within that context, the exercise was useful in identifying the issues involved in estimating resource costs and in demonstrating that a plausible set of estimates could result (see table 5-4). In general, there has been no controversy with respect to the specific estimates produced by Hsiao and Stason in 1979. Any current objections to the results involve the timeliness of the data used and data refinements that might increase the potential realism of the assumptions. The data for the physician time estimates used for each service were collected in the early 1970s and may no longer reflect current physician practices. The simplifying assumptions from the original study might now be relaxed or refined given better data on individual physician practices and their finances. There are some other perspectives, however, on the general problems of estimation of resource costs for payment purposes that are presented in the following sections.

Should It Cost What It Costs?—Another range of issues involves the contrast of concerns between providers and Medicare as a payer. "Resource costs" is fundamentally a supply side concept; reimbursement is more often the subject of demand side considerations. In particular, one must exercise a general caution in applying any resource cost estimation methodology for the purpose of establishing relative payment levels, particularly with the purpose of identifying a "just price" (187). Empirical studies in health care and other industries have verified the economists' theoretical prediction that the costs of production will rise (and occasionally fall) to the level of the purchase price. The most common example cited is the cost of producing airline services prior to deregulation. When the Civil Aeronautics Board established price levels for certain airline trips, the commercial carriers' competition for passengers drove up the provision of in-flight amenities, and hence the

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[17] Average patient contact time in the operating room was derived directly from Study of Surgical Services in the U.S. statistics. Estimated pre- and post-operative patient time was developed by a consensus measure of visit time for any operation. Procedure complexity measures were developed using a Delphi method with a panel of 25 physicians from the Boston area. Training length estimates came from American Medical Association data, and overhead estimates came from *Medical Economics* survey data.

Table 5-4.—Resource Cost Relative Values and Relative Reimbursements per Hour Implied by Medicare Prevailing Charges, Massachusetts, 1978

Physician service (and specialty)	Relative value	Medicare prevailing charge	Payment per hour
Hemorrhoidectomy	0.9	$271	$193
Inguinal hernia repair	1.0[a]	339	218
Appendectomy	1.0	339	272
Cholecystectomy	1.6	570	275
Hysterectomy	1.9	640	279
Lens extraction	1.7	678	679
Suprapubic prostatectomy	1.8	720	399
Transurethral prostatic resection	1.6	678	475
Initial office visit (general practitioner)	0.19	20	40
Routine brief office visit (general practitioner)	0.08	10	40
Initial office visit (internist)	0.21	34	68
Routine brief office visit (internist)	0.09	15	60

[a] By design, inguinal hernia repair was selected as the numeraire service thereby establishing its relative value as 1.0.

SOURCE: W.C. Hsiao and W.B. Stason, "Toward Developing a Relative Value Scale for Medical and Surgical Services," *Health Care Financing Review* 1(2):23-38, fall 1979.

cost of producing those trips. Similar results have been found with respect to the costs of in-center maintenence dialysis given the HCFA's fixed limit on dialysis payments (56).

This result does not even require explicit and direct competition between sellers. To paraphrase one of the earliest neoclassical economic theorists, Alfred Lord Marshall, if the price that the final purchaser is willing to pay is relatively high and relatively flexible, the sellers' purchases of product inputs will also tend to be relatively high and relatively flexible (289). Thus, if Medicare's reasonable charge levels for endoscopic examinations, for example, were initially in excess of resource costs, physicians who purchase endoscopes would be less likely to try to bid down the price of that type of equipment. Other things being equal, over time the "costs" of producing endoscopic exams would rise to the level of the purchase price, the reasonable charge.

Other Resource Cost Issues.—There are several issues that have been identified with respect to the problem of resource cost estimation:

- demand side adjustments to resource cost estimates that might be introduced in a relative value scale such as
  - —identification of physician services generally believed to be ineffective,
  - —identification of services whose provision should be encouraged,
  - —identification of sets of "equally effective" physician services;
- task delegation and physician time estimates;
- variations in practice input unit costs;
- variations in physician incomes with respect to specialty and experience;
- variations in physician practice styles; and
- variations in estimates of resource costs for specific physician services.

Potential Demand Side Adjustments.—As noted above, there might be a need for an adjustment factor in a resource-cost-based RVS to reflect differences in the general effectiveness of specific services. Although some generally effective services may not prove to be effective with respect to a particular patient, there are some services that are generally believed to be ineffective and some, for example, gastric freezing, that have been *shown* to be ineffective. The costs of ineffective services—however inexpensive—need not warrant equal treatment with the costs of services of proven efficacy. On the other hand, one might also want to examine a multiplier adjustment for such services as effective preventive care such as pneumococcal vaccination, if it were believed that payment levels above costs would lead to the additional provision of such services. Finally, a possibility exists that within the set of generally effective physician services, there will be sets of equally effective services that are substitutes for one another. In this case, a pure demand side approach would require that payment for the two services be equal and set at the level of the lower priced service.

Physician Time Estimates and Task Delegation.—It is expected that the most significant observable resource involved in the production of physician services would be individual physician time. The varieties of styles of medical practice, however, suggest that physicians have a great deal of choice with respect to whether they individually perform certain tasks or delegate those tasks to appropriately trained staff. For example, many medical practices routinely delegate blood pressure testing to nurses or physician assistants. If not properly accounted for, the substitution of staff time for physician time could confound any resource cost estimates, or at least introduce additional variation in the estimates of the averages.

A common approach has been to measure only direct physician time and to allocate all costs for support personnel to physician overhead without regard to the specific services in which those personnel may participate. This relatively simple approximating strategy has some merit. The single most common category of employee in physicians' offices is "secretary, receptionist, bookkeeper" (499). These employees are unlikely to be directly involved in the production of medical services. However, there are a significant number of physician assistants employed in medical practices, and appropriate weighting strategies for including those costs would have to be explored (490).

Variations in Practice Input Unit Costs.—Surveys of physician practice costs and incomes by HCFA, the American Medical Association and *Medical Economics* have been successful in eliciting information from physicians on their total annual expenditures for practice inputs. The survey approach has been somewhat less successful in estimating unit costs because of data definition problems and difficulties in determining the appropriate measures of units. Annual expenditure statistics are clearly less burdensome to collect than would be unit costs: there would also be less required detail. As a result, however, the impact of differences in unit costs on practice decisions is unknown.

The notion of the estimation of average resource costs of specific physician services from a sample of practicing physicians would rely on the assumption that there is some degree of uniformity in the production of those services. Although there exist certain (recipe driven) production processes in which there are no choices with respect to amounts of inputs, physicians can and do make choices with respect to the organization of their practices.

Although for the most part physicians' business decisions rather than their clinical decisions are involved, these choices affect the costs of providing clinical services and may affect the estimates of the costs of those services. A simple example can be seen in decisions with respect to office space. In an area of relatively low rentals, a physician practice may acquire office space with relatively large rooms. The net impact on actual rental overhead or absolute rent expenditures is uncertain. Costs could be higher, lower, or identical with the corresponding expenses of practices in areas with higher rental rates. However, in the absence of good data on the unit costs of each practice, use of average rental rates for estimation will make it appear that this practice carried either a relatively larger overhead for office rental expense or absolutely larger rental expenses for each physician service performed in the office.

Variations in Physician Incomes With Respect to Specialty and Experience.—The remaining unit cost of interest is the physician cost. Except for the case of salaried physicians, for the most part this statistic is not directly available. Relevant estimates that are currently available relate to physician net incomes after practice expenses—that often include deferred income. As might be expected, net incomes are computed as residuals. The unit cost measure that results is net professional revenues per year or per hour.

Actual net income is only one of several available means of valuing physician time. The most simple method of valuing the physician resources employed in the provision of a specific service would be to multiply the average net income per hour and the time, in hours, used to produce the service. Actual incomes embody the results of so many individual choices, however, that computation based on any small sample of practices might not lead to accurate results. The alternate method of establishing a relative value of phyician time used in the literature is to base those values on relative complexity and opportunity costs (227,271).

Variations in Physician Practice Styles.—One of the implicit assumptions involved in the development of any resource cost method for potential use in payment reform would be that there are not too many clinical options with respect to performing specific physician services. The underlying distribution of tasks and time would exhibit only some limited variation. If, however, there is a continuum of clinical options, then the averages generated from the observations in an estimation study might not represent any one style of practice. Payment rates derived from such estimates might be too high for some styles of practice and too low for others. For example, in estimating the total approved physician charges associated with Medicare beneficiaries hospitalized in particular diagnosis-related groups, Mitchell, et al. found that the costs attributed to any observation were significantly affected by the presence of an assistant at surgery (320). Payments based on the average would be too high for cases without an assistant, too low otherwise. Given variation in practice styles across physicians performing the same service, one might expect a comparable result.

Variations in Estimates of Resource Costs for Specific Services.—Finally, for all of the reasons discussed above plus any other natural occurrences of variation, one would expect that there would be variation about any average resource cost estimate that can be produced for an individual physician service. The relative size of the variations among a set of services whose resource costs have been estimated is crucial. Even with the most accurate estimation method, resource costs estimates that are not found to be significantly different from one another due to inordinate variation will not prove to be a compelling guide to reimbursement reform.

Relative Value Scales Achieved Through Negotiations/Consensus Development

Both the charge-based and resource-cost-based RVSs would be derived primarily from empirical analysis of quantitative data. The former would involve a somewhat mechanical determination of central tendency values from distributions of charges; the latter would involve a somewhat more thoughtful examination of physician practice cost data, perhaps supplemented with information on the relative complexity of various procedures. An alternative that would place greater reliance on physicians' professional judgments might involve explicit negotiations or consensus development processes to achieve an RVS.

The developers of previous RVSs have employed professional judgments in modifying the results obtained from statistical manipulations. For example, in the preface to the 1960 version of the California Relative Value Studies, it is noted that although basic relative values were established by statistical analysis of data from 6,800 physicians with respect to roughly 600 procedures (75):

> [I]n a few instances it was apparent from analysis of the data and from consideration of subsidiary data that strict adherence to the survey values would produce unrealistic results. In such instances, values were set by consultative means.

Thus, the use of professional judgments in the establishment or revision of an RVS through negotiations or consensus development procedures is not unprecedented. In fact, considerable physician consensus with respect to relative values has been shown to exist. In the 1950s, Horton demonstrated this fact through analysis of surveys of physicians in Connecticut and Montana (225,226). Hsiao and Stason found such consensus within a set of surgical services although not between surgical services as a class and office visits as a class (227). Recently, Egdahl and Manuel have used a consensus development process to rank surgeries with respect to complexity and severity (119).

Types of Decisions.—One should make distinctions between the various types of decisions that might be the subject of an RVS negotiation or consensus development process. (For the purpose of discussion they will be described as changes in relative values. The same types of decisions would also have to be made in the initial development of an RVS.) Negotiations with respect to the value of a conversion factor or factors used to transform an RVS into a fee schedule are one example, but will be discussed in a later section. Other examples are as follows:

- changes in relative values with respect to a numeraire service whose price is to remain fixed,
- changes in relative values for a class of services while the price of all other services remains fixed, and
- changes in relative values subject to the constraint that projected total relative values be fixed given anticipated volumes for each service.

The relation or lack of relation between the RVS and one or more prices in a fee schedule changes the nature of the negotiations; hence the distinctions made above. The first example might involve specific services perceived to be either undervalued or overvalued with respect to actual payment levels; hence the need for revisions in a relative value scale without a general change in conversion factors. The second example is itself best exemplified in the current discussions with respect to the relative values of nonprocedural services. One might expect discussions on the merits of raising the relative values of those services while holding the conversion factors for all other services constant, the expectation expressed by FTC (554). Alternatively, one might discuss the merits of reducing the relative values of all other services, holding the conversion factor for nonprocedural services constant. The final example would involve "pure" changes in relative values, but this would imply much less certainty about results, since all prices in any fee schedule derived from the RVS in question would be subject to change.[18]

Possible Outcomes.—Berenson has discussed various options that might be employed in establishing a relative value scale through group-decisionmaking processes (33). He suggested that although costly, a commission representing the community at large might be better able to develop an RVS that reflected a broad view of what should constitute the values of a range of medical services than a commission constituted of "experts" representing each of the various specialties. He also noted that there are no models available that could be used to predict the impact on the relative value of any service that might result from such complex decisionmaking processes.

Experience to date with negotiating systems used in other countries gives little additional guidance on outcomes. The West German sickness funds have tried without much success to reduce the relative fees paid for laboratory services and to raise fees for basic medical services so as to increase the relative incomes of general practitioners (162). However, most governments that have been involved in such negotiations have been perceived to be more interested in adjusting fees to control expenditures in the aggregate rather than in fine-tuning with respect to individual services (33).

"Competitively" Developed Fee Schedules

The CPR system, to a certain extent, is neutral with respect to price competition in the markets for physician services. Physician fees evolve, for whatever reasons, and the CPR process educes a set of approved charges from the middle to upper ranges of the fee distribution. At best, this is a passively competitive posture: Medicare as a price taker without searching for the lowest price. However, more competitive postures for the program are available. These would include pricing policies that would be more directly analogous to perfect competition, bilateral monopoly, or the use of the purchasing power of a monopsonist.[19]

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[18] The process might be as follows: Given a revised set of relative values, one could sum the anticipated total of relative value units, assuming that the volume of services from a prior time period would remain unchanged. Given that volume, one would compute the conversion factor implied by a specific budget target. Since any set of relative values would imply its own conversion factor, all prices in the resulting fee schedules would be changed.

[19] Perfect competition describes an idealized market for a homogeneous good in that there are a substantial number of both (cost minimizing) buyers and (profit maximizing) sellers, no one of which has a direct effect on the price of the good in question. (Hence, the phrase "price taker.") Bilateral monopoly describes a market in which there is a single seller and a single buyer. Monopsony describes a market in which there are many sellers but only a single buyer. Perfect competition and monopoly (or monopsony) are not opposite ends of a spectrum with respect to competition. The op-

HCFA has used various analogs of such reimbursement policies for the purchases of pharmaceuticals, durable medical equipment, and laboratory tests (292).

Four approaches to "competitive" physician payment policies are discussed below. The first two involve unilateral buying policies that might be adopted by the Medicare program in developing a fee schedule. The third involves soliciting for competitive bids from physicians or other suppliers of physician services from which a fee schedule would be constructed. The fourth alternative involves direct negotiations between the Medicare program and physician groups to explicitly develop a fee schedule.

Lower the Price

In theory, a virtue of the CPR system is that it allows beneficiaries in any locality the expectation that a significant fraction of the charges for a physician service will be covered by Medicare almost without regard to the beneficiary's choice of a physician. Only those beneficiaries who receive services from the most expensive doctors should expect to have substantial additional liabilities, and those liabilities would apply only on nonassigned claims. This flexibility was one of the reasons that prompted the National Association of Blue Shield Plans to adopt the UCR[20] concept in the mid-1960s. Perhaps equally important, UCR offered the Blue Shield Plans the opportunity to sell a product that would nearly always give subscribers paid-in-full benefits without the additional cost of setting (national) fee schedule payments at a level high enough to guarantee physician participation in all parts of the country (312). Obviously, the same would be true for Medicare under CPR even if the jurisdictions in question were each of the States as an alternative to the Nation as a whole.

Although the degree of physician participation was and is an important marketing consideration for Blue Shield Plans, it is not clear that the Medicare analog—physician acceptance of assignment —is as important for the Medicare program given that: 1) carriers do not act as insurers that underwrite the Medicare program, and 2) there is recent evidence from the Medicare participating physician program that a significant number of physicians will agree to accept assignment on 100 percent of claims (521). Assignment is important to both Medicare beneficiaries and to the Medicare program. However, a fee schedule alternative to CPR need not involve a relatively high price uniform in all jurisdictions to guarantee high assignment statistics. A relatively low price may suffice in some localities. Specifically, if an approved charge of $2,000 is necessary to elicit an assignment rate of 50 percent for cataract extraction operations in New York City, that does not imply that $2,000 should be the approved charge for that operation for all of New York State, much less all of the country. Lower prices might elicit equal or higher assignment rates for that operation in jurisdictions outside of New York City.

One might establish fee schedule payment levels below current prevailing charge levels. In fact, a relatively low percentile level might be selected, such as the 50th percentile of approved charges or lower. (Under Medicare's "lowest charge limitations" applied to certain laboratory tests and items of durable medical equipment in the late 1970s, payment levels were restricted to the 25th percentile.) With few exceptions, use of the 50th percentile would produce a fee schedule comparable to that that would be produced by using average approved charges to develop a relative value scale. If the distributions of approved charges for individual physician services are skewed to the left, selection of the 50th percentile as the fee schedule standard might have a slight downward effect on total Medicare expenditures for physician services. Such a decline, however, would be moderated if there were volume increases observed with respect to physicians' experiencing reductions in approved charges.

Find the Lowest Sufficient Price

A potential difficulty with the use of the 50th percentile as the fee schedule amount is that in

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posite of competition—whether perfect or monopolistic—involves a lack of (low) price searching by buyers and a lack of purposive behavior by sellers to either maximize profit, surplus, or market share.

[20] UCR stands for "usual, customary, and reasonable charges," the pricing concept used primarily by Blue Shield plans. It was developed prior to the introduction of Medicare, and was the model adopted for CPR. Blue Shield's "usual" charge became Medicare's "customary" charge, Blue Shield's "customary" charge became Medicare's "prevailing" charge.

some jurisdictions that amount will be too high and in others too low to secure sufficient access for beneficiaries to needed health care services. Were the level too high, one might observe an increase in the number of physicians becoming Medicare "participating practices" and an increase in the percentage of claims for which assignment was accepted. In contrast, were the level too low, one would expect to observe a decrease in physician participation or acceptance of assignment.

Rather than merely reacting to these changes in beneficiary access, a policy might be initiated to explicitly identify the *lowest* fee schedule amounts subject to the constraint of achieving comparable expected levels of beneficiary access in each jurisdiction. For example, carriers might be instructed to identify the lowest approved charge for a particular physician service that would include 25 percent of the physicians who had provided such services to Medicare beneficiaries. (Once the fee schedule amount had been established, however, any and all physicians could provide the service at that price.) Alternatively, the carriers might be instructed to identify the lowest approved charge (for each service) that would encompass a particular fraction of *assigned* services in each locality.

By design, these types of procedures for establishing fee schedules would draw maximum fees from the lower end of the distributions of approved charges rather than the upper end as in the current CPR system. The pricing philosophy in this case is analogous to that used in the Maximum Allowable Cost program that HCFA has implemented for purchases of pharmaceuticals—primarily in the Medicaid programs (261).

To remain competitive within the Medicare system, physicians would have to restrain their fees or possibly subject their Medicare patients to substantial amounts of nonassigned liability. Alternatively, the physicians whose fees were at or below fee schedule amounts might find additional Medicare patients requesting their services in lieu of continuing to obtain services from the relatively higher priced physicians in a particular locality. In contrast, under the current CPR system (as supplemented by Medigap insurance), there is little or no advantage to a physician in having relatively low fees.

Solicit Bids

If there were some uncertainty that physicians would supply sufficient services to Medicare beneficiaries under either of the two empirical methods of establishing fee schedules from existing distributions of approved charges, an alternative approach to competitively procuring such services would be to solicit bids. This approach might take the form of exclusive or semi-exclusive bidding. Under the former, a single physician group or consortium of groups willing to supply up to a specific quantity of a particular service for a fixed unit price would bid for the exclusive right to provide those services to the Medicare population in a specific geographic area. Obviously this would imply restricting beneficiary freedom of choice in that area. Partly for this reason, it might be particularly applicable to such services as extracorporeal shock wave lithotripsy (ESWL), where a relatively small number of providers can be expected in each market. This approach, however, would seem to be inappropriate for a service such as the provision of pneumococcal vaccine that is easily and generally available from many providers.

Alternatively, a semi-exclusive approach might be tried. Under that approach bids for particular physician services would be solicited from all practices in a particular locality. These bids would be in the form of both a price and an expected quantity of service to be supplied at that price. All physician bids would be examined to identify the lowest bid price sufficiently high to provide the expected utilization of the service in question. Again, any and all physicians in that locality might be allowed to provide the specific service at that price. In fact, much as in the U.S. Treasury's auctions for its bills, physicians might bid "the auction price" for their expected provision of the service in question, explicitly accepting the price to be determined by the bidding. This approach would work well for pneumococcal vaccinations. However, it might vitiate any potential Medicare market advantage in procuring lithotripsy or magnetic resonance imaging services if all bidders knew they might participate at the winning price.

A problem with either of these potential bidding schemes is the multiplicity of both services and localities. Conduct of the bidding even on just a one-time basis could be extremely complicated. Further, under a simpleminded version of the exclusive bidding option, one might expect absurd results, such as one practice in the northern part of a city with exclusive rights to limited office visits, while the rights to limited hospital visits might be won by a competing practice on the other side of town. There is also the potential problem of the creation of a local monopoly for a single winning bidder. If market entry required substantial resources, a single winning bidder without competition might successfully resist subsequent Medicare cost containment initiatives.

For these reasons, semi-exclusive bidding might be conducted with respect to relative value unit conversion factors for a complete set of physician services. Alternatively, exclusive bidding for a relatively compact set of related services might be conducted with any additional services not in the bidding set to be priced based on the RVS conversion factor implied by the bid. Finally, exclusive bidding might be used only for relatively homogeneous services with high expected volume or expenditure levels, such as cataract excisions (with intraocular lens insertions) or laboratory tests. All other services might be priced using one of the other alternative approaches to developing a fee schedule.

Negotiate

The final "competitive" option would involve explicit negotiations between the Medicare program and physicians providing services to Medicare beneficiaries. In theory, this could take the form of service-by-service discussions to arrive at a fee schedule, although more likely would be negotiations with respect to conversion factors to be used with an existing RVS. The latter has been the more commonly observed pattern among government programs in other countries (33). In Canada, for example, the Ontario Health Services Insurance Plan has adopted every version of the RVS promulgated by the Ontario Medical Association, negotiating primarily with respect to the conversion factor (578).

Due to FTC interpretations, this is an option that exists only for Medicare or other government-sponsored programs, such as Medicaid. Blue Shield *negotiations* with physician groups, for example, would be prohibited although physician input in the form of discussions about fees would not be prohibited. The problems facing the Medicare program in implementing negotiations, however, would start with identifying a group with whom to negotiate. The American Medical Association is the largest single association of physicians in this country, but its membership includes just more than half of all U.S. physicians. A new physician group might have to be constituted to sit on the other side of the negotiating table.

Other countries with experience in negotiating fees have tended to recognize existing physician associations. In Canada, the Medical Care Act of 1966 established that a uniform schedule of fees would be negotiated periodically between the medical association of each province and the provincial agency responsible for their payment (28). In West Germany, the Cost Containment Act of 1977 mandated the establishment of a National Health Conference including all major interest groups active in the health care sector, specifically including the associations of sickness funds' physicians. A national relative value scale is periodically negotiated between the association of sickness funds and the associations of sickness funds' physicians (387).

IMPLICATIONS OF PAYMENT BASED ON FEE SCHEDULES

The dimensions by which to assess the conversion of Medicare physician payments from CPR to a fee schedule are: quality of care, access to care, cost, technological change, and administrative feasibility. Much of the following analysis will be speculative, because of the lack of data available to examine even the initial changes in fees that might be wrought by a conversion to fee schedules, much less to project behavioral changes that might be induced thereafter. In addition, although the conversion to a fee schedule for the most part would be a quantitative rather than a qualitative change in payment policy, in the aggregate the expected effects of this type of change would be small. The CPR system is basically a fee schedule system with physician-specific fees for many services of most physicians and locality-specific and/or specialty-specific fees for the remaining services/physicians.

In that both CPR and any of the alternative fee schedules involve fee-for-service payments, the impacts of a switch to the latter may rest solely on any difference in the level of payment rather than in the method of fee determination. Given that a physician's clinical choices with respect to specific services are also influenced by considering patient preferences, available practice resources, and medical indications with respect to modalities within the physician's repertoire, other things being equal, the effects on clinical choices of changes in that physician's approved charges for specific services should be small. More likely are changes in physicians' entrepreneurial decisions with respect to agreeing to provide services to Medicare patients in the first place and/or accepting assignment on those services.

Paradoxically, conversion of Medicare physician payments from CPR to a fee schedule system would both make more rigid the structure of relative values for physician services and allow more Government flexibility in changing those relative values. The use of a fee schedule for payment purposes would imply that the ratio of the approved charge for any service to the approved charge for any other would be a constant. If a fee schedule were based on a single national relative value scale, such ratios would be fixed for all services in all jurisdictions. Because of this, changes in a single fee in the schedule could dramatically change relative values. In theory, correcting any perceived imbalances in approved charges, such as those involving procedural/nonprocedural differences, would be simpler in a fee schedule world than in a world of CPR. But because the effects of such changes would be more pervasive under fee schedules, there might be more resistance to such change. For this reason, advocates of such changes might prefer that procedural/nonprocedural imbalances be corrected in the initial implementation of the fee schedule.

Quality and Access

There are no data with respect to the relationship, if any, between quality of care and *method* of payment. And even any such relationship between quality and *level* of payment as exists would be unlikely to be discerned if a fee schedule conversion led to relatively small differences in payment levels. In terms of the technical quality of performance of specific services—once the choice has been made to provide those services—price can be expected to be of little importance in the short run.[21] In the long run, however, lower Medicare payments might lead physicians to obtain lower quality supplies, facilities or personnel.

The quality impact of price—in this case, the level of the Medicare approved charge under a fee schedule—is likely to be indirect through its effects on access to particular physicians and the facilities in which they practice. That impact will depend on the opportunity cost to the individual physician of the use of his or her time to attend to an alternative, non-Medicare patient. To the extent that private insurance pays a physician higher amounts than Medicare and to the extent that patients with such insurance demand the physician's services, that physician's Medicare patients may not receive as much time or attention as otherwise. And to the extent that those private patients recognize quality and demand the services of physicians perceived to provide relatively high quality services, the opportunity costs for those physicians of attending to Medicare patients will be higher. If it were the case that physicians who provided relatively high quality care indeed perceived higher opportunity costs in the private market (regardless of the level of their Medicare approved charges relative to peer physicians) and responded by not participating in the Medicare program, quality of care for Medicare patients might decline.

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[21] The "short run" denotes a period of time during which physicians' capital and other resources cannot be changed. By construction, therefore, the costs of discriminating between patient payer classes with respect to quality could be substantial.

How the resulting level of quality would compare to that under CPR is uncertain. The major theoretical difference between a fee schedule and CPR is that CPR would allow a higher payment to a physician who, because of superior quality, had a higher customary charge. Of course CPR allows higher payments to any physician with higher customary charges, regardless of origin. Hence, it is unclear that only the physicians of highest quality are disadvantaged by Medicare payment levels.

Within the category of fee schedules, any options that eliminated specialty differentials or locality differentials might also affect quality in this regard. In general, quality could be enhanced to the extent that physicians who provide relatively high quality services respond to increases in their approved charges by increasing their participation in the Medicare program. Other physicians, however, might also respond comparably. Further, quality could be reduced in response to an aggregate increase in approved charges to the extent that those increases lead to a increase in the probability of beneficiaries' receipt of services of inappropriately high risk or of little effectiveness. These gross effects can be anticipated with any physician payments regardless of whether there are increases or decreases in average approved charges. Which effects will predominate cannot be predicted, a priori.

If the initial estimates from the resource cost based RVS approaches are correct (227), one might expect that the approved charges for office visits would increase relative to surgical services under a fee schedule derived from such a study. If the approved charges were realigned by raising average approved charges for office visits relative to current levels without changing the average approved charges for other services, one might expect an increase in the provision of the nonprocedural services. This increase would improve quality of care only to the extent that the expected value of changes in health status attendant to such visits exceeds current approved charges. (There is no evidence, however, of current "underuse" of such services given current levels of approved charges.) If average approved charges were lowered for the surgeries leaving office visit average approved charges unchanged, one would not expect an improvement in quality resulting from an increase in the provision of primary care. However, to the extent that surgical services that are not risk-free are provided in response to current approved charges that exceed either costs to the physicians or benefits to the Medicare patients, a decline in surgeries might lead to an improvement in quality for Medicare beneficiaries.

Access and Assignment

As indicated in chapter 2, a positive correlation between the level of Medicare approved charges and assignment has been well established. Conversion of Medicare physician payments from CPR to a fee schedule based on average or median (or some other central tendency measure of) approved charges would result in increases in approved charges for some physicians for some services and decreases for others. Therefore, one would expect a decrease in the probability of assignment, being accepted in those instances where approved charges were reduced and an increase where approved charges were raised. (Similarly, one would expect an increase in the probability that a physician would become a "participating physician" if his or her approved charges had been increased.) Unfortunately, use of the available models of assignment to make projections can only provide aggregate expected effects; in particular, a budget neutral fee schedule of any variety would be estimated to have an expected zero net impact on assignment. Within such models individual beneficiaries would be projected to experience increases or decreases in assignment with the accompanying changes in liabilities for physician services. More refined models than those currently available would have to be developed and validated to estimate specific supply responses and allow a more realistic estimation of aggregate changes in response to conversion to a fee schedule embodying a specific level of aggregate fees.

If Medicare converted to fee schedules and imposed mandatory assignment, some physicians could be expected to no longer provide services to Medicare beneficiaries. Those physicians who dropped out of the Medicare program would be likely to be those with relatively high billed charges compared to their peers in individual localities. This could reduce beneficiaries' access to certain types of physicians. If, on the other hand, the fee schedule amount was established only as the Medicare allowance and not necessarily implying payment in full, beneficiaries' access to physician services would become primarily a question of their personal finances. Beneficiary financial barriers to access to the services of physicians with relatively high billed charges could be increased. With respect to any single physician so affected, this would hurt his or her poorer Medicare patients more than the more affluent ones.

Costs

Medicare Program Costs

With respect to Medicare expenditures for physician services at any point in time, the cost impacts of a change to fee schedules would depend more on the level of payment than the method of fee determination. Assuming that a budget neutral conversion to fee schedules were imposed, one might expect little initial impact on total Medicare Part B expenditures. On the other hand, one might speculate that physicians whose approved charges were constrained would respond by increasing the intensity or quantities of services billed, such as billing for longer, and more expensive, visits or providing additional ancillary services; hence there might be some increase in costs. (Those physicians who experienced an increase in approved charges might not raise their charges so much as otherwise in future years, but they would not be expected to bill for fewer or less expensive services on average in the year of the conversion.) As indicated in chapter 2, the evidence with respect to physicians' volume responses to changes in approved charges is equivocal. Unless there was a substantial volume response, under a fee schedule conversion conducted to coincide with the advent of a new fee screen year (that would be accompanied by higher aggregate approved charges regardless of the conversion), any initial cost impacts might be undiscernable.

If a fee schedule conversion embodied a selective reduction in average approved charges—e.g., a reduction in approved charges for services for which costs were believed to have declined substantially since their introducton—savings might accrue to Medicare. If there were no change in the volumes of such services, the savings would be proportional to the reduction in approved charges. If physicians reduced the provision of such services, the savings to Medicare would be greater. Further, to the extent that the financial incentives in the current high payments cause inappropriately high utilization levels for such services where there is also patient risk, a reduction in use might imply an improvement in quality for Medicare beneficiaries. If physicians responded to reduced approved charges by increasing volumes the cost reductions and potential quality enhancements would be smaller than otherwise.

In order to examine and estimate changes that might occur under a budget-neutral conversion to fee schedules that simultaneously reduced some procedural/nonprocedural imbalances, a simulation analysis was conducted (247). Assuming there were no charges in volume, if approved charges were unchanged on average, but the fee schedule introduced was designed to "adjust" approved charges to increase payments for office visits—chosen to illustrate the effects of raising the relative approved charges of nonprocedural services to levels commensurate with the estimates from earlier studies (227), total Medicare costs, by assumption, would be unchanged, but payments for office visits would nearly double (247). Revenues for general practitioners and family practitioners would increase 50.8 and 37.3 percent, respectively. Internists' revenues from Medicare would be nearly constant, but radiologists and surgeons would experience declines.

If the fee schedule were initially based on average approved charges, but—for illustration—approved charges for office visits were increased as above, holding all other fees in the schedule constant, total Medicare physician payments might increase by 3.9 percent, including a 36.7 percent increase in payments made for office visits assuming that carriers paid the lower of the billed charge or the fee schedule amount (247). Paying the fee schedule amount in all cases would require additional increases in expenditures.

Changes in Medicare costs over time might be influenced by a change to fee schedules for two reasons. The first involves the fee screen updating process. Under CPR this is a mechanical, if not mindless process. Increases in approved charges are somewhat limited by MEI, but there are still a considerable number of services not constrained by the Index. Further, average approved charges can increase by more than the increase in MEI even for those services where the prevailing charge is established by MEI.[22] A potential virtue of a fee schedule is that the entire price structure can be controlled during the fee schedule updating process. In fact, a study of physician payments in Medicaid programs found that expenditure increases were lower in those States that used fee schedules compared to those that used CPR approaches to fee setting (215).

A second, and much less likely, reason why Medicare expenditure increases might be reduced under a fee schedule regimen involves the relative approved charges for preventive care. This argument suggests that if, for example, under a resource-cost-based RVS, approved charges for office visits were increased, a greater number of preventive care services would be provided. As a result, there would be a reduced need for acute curative services in later time periods. Although there might be an initial increase in expenditures given the increase in approved charges for the nonprocedural services, the rate of increase in total expenditures—if not the level of expenditures—would decline. The cogency of this argument is reduced, however, by recent evidence that has not verified that those persons who forgo preventive care in one time period experience greater costs in future time periods (343,348). Furthermore, if greater use of preventive services increased life expectancy, the total Medicare expenditures would probably increase as survivors incurred medical expenses in their additional years of life (437,485,576).

The additional effects on the Medicare program's costs of any changes in assignment policy that accompanied a conversion to fee schedule should be neglible compared with a fee schedule conversion without assignment changes given that Medicare only pays that portion of the bill equal to the approved charge. To the extent, however, that a mandatory assignment policy reduced the participation of physicians with relatively high charges, declines in expenditures that might otherwise have been made for the services of such physicians might exceed the increase in payment levels for physicians whose prior approved charges had been relatively low. Beneficiaries who formerly received services from physicians with above average approved charges who elected to no longer accept Medicare patients would be expected to either switch to less expensive physicians or forgo the use of services that might otherwise have been provided. Both effects would tend to reduce aggregate Medicare obligations. A net increase in Medicare expenditures would be expected only if the above average charge physicians who remained in the program increased volumes by more than enough to offset the reductions effected by beneficiaries' receiving services at or below the previous average approved charge. Under a fee schedule implemented as the Medicare allowance only, beneficiaries might reduce their utilization of services in the aggregate. This might lower Medicare expenditures, but primarily by shifting Medicare costs back to the beneficiaries.

Whether an expenditure cap would, in fact, cap expenditures is an open question. For example, the evidence from the Canadian province of Quebec has been interpreted to both support and refute the effectiveness of an expenditure cap in the form of individual physician revenue limits—a system with direct rather than indirect physician incentives under a payment system with a single payer rather than many payers as in the United States. It is alleged to have produced gaming behavior on the part of the physicians (388), but other Canadian observers conclude that the limits were set so high that they may not have had any aggregate effect (135). An expenditure cap system with less direct incentives for individual physicians would be unlikely to be more effective in constraining expenditure increases.

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[22] The MEI will constrain the increase in the maximum approved charge for a given service. Until 100 percent of the volume of a particular service is limited by the MEI, the average approved charge for that service can increase faster than the maximum.

Beneficiary Costs

As would Medicare program expenditures (and assuming a continuation of the present participation/assignment policies), beneficiary costs would depend more on the level of payment than on the method of approved charge determination within a fee-for-service system. Further, under a budget neutral conversion to fee schedules, unless there were substantial changes in service volumes that were not counterbalancing, the net impact on beneficiary costs should be zero. In fact, given the increases and decreases in approved charges, one would expect both decreases and increases, respectively, in nonassigned liabilities and increases and decreases, respectively, in beneficiary cost-sharing liabilities. For example, a beneficiary whose physician experiences an increase in approved charges will be more likely than otherwise to have that physician accept assignment, thereby reducing the expected nonassigned liability. At the same time, however, that beneficiary will face an increase in coinsurance liability equal to 20 percent of the increase in the approved charges. With respect to any single physician, the expected change in nonassigned liability will exceed the expected change in coinsurance. The total net effect on any one beneficiary will depend on his or her physicians' combined assignment/participation behaviors and changes in approved charges.

A fee schedule implementation that is designed to reduce Medicare program expenditures probably will result in increased beneficiary liabilities as long as the case-by-case assignment choice remains an option for physicians and as long as there exists a private market for physicians' services. A net decrease in average approved charges can be expected to lead to reductions in assignment by nonparticipating physicians and reductions in the numbers of physicians who elect to become participating physicians. These results will be somewhat ameliorated only if some physicians in competitive markets find it necessary either to participate or accept assignment in a high percentage of cases in order to retain desired patient loads. In this regard, where beneficiaries faced with increased liabilities can identify physicians who continue to accept assignment, they may be able to avoid the increase in out-of-pocket expense by switching physicians.

In simulating a conversion to a fee schedule based on average approved charges, Juba estimated several outcomes based on possible values for the relation between approved charges and assignment (247). The more responsive physicians were to changes in approved charges, the greater was the potential increase in beneficiary costs since reductions in approved charges for physicians would be more likely to be countered by decreases in assignment by the physicians so affected. If physicians did not change their service volumes or assignment decisions following a conversion to a fee schedule based on average approved charges, changes in beneficiary liability would be minimal.[23] The more responsive physicians are assumed to be to changes in approved charges, the greater the estimated increase in beneficiary costs (see table 5-5). For this reason, provider revenues would be less affected by a conversion to a fee schedule based on average approved charges than would Medicare program costs.

In the very short run, beneficiary financial costs would be reduced by a policy of mandatory assignment. In the first quarter of 1985, the beneficiary nonassigned liability was nearly $33 on an average unassigned claim (535). Nonfinancial costs, however, such as waiting times and delays in scheduling appointments, might increase if fewer physicians participated in the Medicare program because of a mandatory assignment policy. Under a schedule of Medicare allowances, potential extra billings by physicians would be unlimited, but beneficiaries' choices with respect to their total out-of-pocket costs for specific physicians would determine whether their aggregate expenses increased or decreased. Given the added financial incentives to identify relatively inexpensive physicians, total beneficiary costs could decline.

Societal Costs

The initial cost effects of a Medicare fee schedule conversion with respect to nonfederally insured or private pay patients should be small.

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[23] There might be an aggregate increase in beneficiary liability if approved charges were based on the fee schedule amount even in those cases where the physician's billed charge was less than that amount.

Table 5-5.—Simulated Alternative Percent Changes in Beneficiary Liabilities by Provider Specialty Following Conversion to a Fee Schedule[a] From CPR Payment, South Carolina, 1983

Elasticity[b]	All specialties[c]	General practice	Family practice	Internal medicine	General surgery	Orthopedic surgery	Ophthalmology	Radiology
0.00	0.8	−11.5	−10.0	8.9	0.8	1.7	2.7	−0.2
0.50	2.8	−11.1	−9.9	11.5	4.2	3.1	3.2	1.8
1.00	4.6	−11.1	−10.0	13.9	7.3	4.4	3.6	3.7

[a] Fee schedule based on statewide average approved charges.

[b] Assumed values for physicians responses to changes in approved charges with respect to assignment without respect to physician specialty. For example, an elasticity of 0.00 implies there would be no change in physicians' assignment decisions; an elasticity of 1.00 implies that for any given percentage change in approved charges, there would be an equal and opposite change in assignment rates.

[c] Includes physicians in listed specialties and others.

SOURCE: D. Juba, "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," prepared for the U.S. Congress, Office of Technology Assessment, Washington, DC, November 1985.

Medicare represents 17 percent of the market for physicians services (353). Most Blue Shield plans and most of the rest of the physician insurance market establish prices through usual, customary, and reasonable fee determination systems much like CPR. If a substantial number of physicians did not experience great changes in approved charges under a conversion to a fee schedule by Medicare, little else would be expected to change solely because Medicare adopted a fee schedule approach to physician payment. The increasing number of physicians in the United States might lead to a decline in the rate of increase in physician prices, but such a deceleration would also be relatively unaffected by a change in Medicare payment policy. Other things being equal, only if patients in the non-Medicare market (and their insurers) were unresponsive to physician prices would there be a possibility for an aggregate increase in expenditures for physician services in the absence of a relative reduction in fees charged to those patients.

If Medicare did switch to a fee schedule, there might be increased interest by the private insurers in establishing their own fee schedules, particularly if the Medicare program published a comprehensive relative value scale. Given the competitive nature of the market for health insurance, however, no insurer would want to be in a position where it could not offer at least one line of paid-in-full benefits on a price competitive basis. Locally adjusted fee schedules might be attractive to employer groups given their implicit cost-saving incentives and the relative predictability of benefit expenses. On the other hand, programs for national accounts with fee schedules that could not guarantee nearly uniform insurance coverage for members in different parts of the country would be resisted by labor and management alike. It was this set of interests that led to the adoption of UCR programs in the first place (312).

Conversion of Medicare payments to a fee schedule that lowered approved charges on average would prompt concern about cost-shifting. The apprehension of many nongovernmental third-party payers would be that the effects of such a fee schedule would be to lower Medicare payments without reducing physicians' costs, thus increasing the charges to all other payers. To the extent that there is a competitive market for medical insurance, this issue may be irrelevant. The various insurers offering health insurance coverage for physician services cannot afford to let benefit costs rise unreasonably without having to raise premiums, hence jeopardizing market share. Although it has long been recognized that there are circumstances when it will be advantageous to sellers to have different prices paid by different purchasers, given a decrease in prices paid by Medicare under such circumstances, a rational (physician) seller would decrease rather than increase charges to other payers in order to maximize revenues (at a new, lower expected charge level given the change in relative fees available for treating patients from the various payer groups.)

A reduction in Medicare approved charges for physicians that have substantial Medicare patient loads or aggregate reductions in charges by all payers might serve to increase incentives for efficiency in the production of physician services for physicians so affected. There would be no expected change, however, in efficiency in the production of health care services requiring inputs in addition to physician services except to the extent that those inputs are complements to physician services. Nor would greater efficiency be expected in the combination of services used to treat a medical condition or in the weighing of the costs and benefits of services.

Technological Change

Technological change may be one area in which method of fee determination can have an effect in addition to level of payment. In this regard, as long as payment rates are determined prospectively without regard to costs, it will always be the case that the higher the level of potential payment, the greater the potential return to innovation, particularly cost-saving innovation. Interest in cost-saving innovation, however, may be greater the less is the difference between payments and current costs. Quality-enhancing innovations that involve increases in cost would probably be advanced more under current CPR than any other alternative physician payment system because payments are based on charges that can be increased to reflect increases in costs. Such innovation would thrive more under most fee schedules than under packaging or capitation. A new fee for a new service would probably be introduced within a fee schedule system. But under packaging and capitation, adoption of cost-increasing technologies would add to cost but not to revenue, and payment recipients would have little financial incentive to adopt such technologies except to prevent losing patients.

Where the physician payment includes both professional and technical components, payment levels can provide (or fail to provide) incentives for technological change, particularly with respect to cost-saving innovations. However, where total payments for a service are split between physicians' professional components and facility or equipment expenses, the effects of physician payments on technological change are uncertain. Further, the specific effects of *Medicare* physician payment policies may be negligible with respect to any technologies where Medicare beneficiaries are only a small fraction of the relevant patient population and hence where innovation and diffusion may be driven by the policies of private insurers.

Even where Medicare policies may make a difference, as long as Medicare *institutional* payments to hospitals, outpatient departments, and ambulatory surgical centers are large compared to payments to physicians for particular services dependent on acquisition of resources paid by Medicare intermediaries under either Part A or Part B, innovation in such physician services may depend more on institutional payment policies than physician payment policies. If those facility or equipment expenses are not recognized as covered services or if institutional payment levels are too low, many physicians may be unable to secure access to such equipment for their Medicare patients regardless of how remunerative the Medicare approved charge for the professional service may appear to physicians. (Although hospitals may continue to compete for physicians and patients by attempting to acquire "prestigious" and costly new equipment, there have been neither studies nor anecdotes to suggest that such acquistions have been associated with the payment levels for physician services associated with the use of such equipment.) Only where the physician payment levels were too low might physicians not adopt certain technologies for their Medicare patients even where the institutional payment policies did not inhibit acquisition of the resources required for the technology in question.

Within the fee schedule options, treatment of new services will almost always be an incidental matter. Obviously, vendors of new services can be expected to recommend high approved charges rather than low ones. Therefore, advocates of any new potentially cost-saving service, such as extracorporeal shock wave lithotripsy, will want to argue on relative value grounds for establishing an approved charge based on an existing substitute service. Advocates of potentially cost-increasing innovations such as MRI for many conditions would prefer resource-cost-based approaches. Were exclusive competitive bidding to become a generally accepted means of establishing fees, the potential advantages to providers of cost-saving innovations would increase, spurring additional innovation along those lines. However, to the extent that competitive procurements were periodically reopened for bids, the potential physician returns to innovation can be expected to be bid to zero. The diffusion of technologies whose approved charges are lowered is likely to be retarded.

Administrative Feasibility

Compared to CPR and packaging, fee schedule administration would be easier. CPR, in particular, requires the equivalent of maintenance of individual fee schedules for each physician practice. Under all of the fee schedule approaches considered, the need to retain *physician-specific* fee data would be eliminated although aggregate fee data might be retained for updating purposes. In addition, beneficiary and provider inquiries should be reduced because the payment levels for any service can be established and disseminated in advance.

With respect to updating, relative ease of administration would depend on whether replication was selected as the means to update the fee schedule over time. Some of the fee schedule options would require fairly elaborate construction efforts for an initial implementation. Replication in those cases would be costly. None of the fee schedule approaches would necessarily require replication for updating. In fact, updating through the use of an index such as the current MEI or a more refined index could be performed as a purely ministerial exercise for any fee schedule option.

Periodic examination of fee schedules for recalibration within the schedule or for proper evaluation of new services would be a useful adjunct to any of the options. Here again, replication is an option for such periodic examinations, but not a requirement. Combinations of fee schedule development methods for this purpose would not be illogical. As indicated in an earlier illustration, one might initially change to a Medicare fee schedule by having carriers estimate average approved charges for each procedure to establish a baseline RVS. (For payment purposes, this RVS might be converted to a fee schedule that might be updated each year using the MEI.) New procedures might be given interim payment rates following a consensus development process. Final payment rates could be established following estimations of resource costs, perhaps 18 to 36 months after the interim rates had gone into effect. Finally, the members of an independent physician payment review commission might review or recommend changes to correct any interjurisdictional or interspecialty differences brought to their attention.

There are major differences among the fee schedule options in terms of the efforts required for implementation. Use of historical charge data by the carriers clearly would be the easiest method. Estimation of the lowest prices needed to procure certain levels of (assigned) utilization would be straightforward, but would require greater effort. Development of resource-cost-based relative values for even a significant fraction of the over 7,000 available procedures in HCPCS would be a substantial undertaking. Unfortunately, the efforts required for consensus development, competitive bidding, and fee schedule negotiations cannot be estimated at this time. There is little or no experience in the use of these methods specifically for the purpose of pricing physician services in the United States. They are likely to require more effort than the purely data driven approaches. Whether they would require more or less resources than resource-cost-based estimates is uncertain.

CONCLUSION

The primary potential advantages of fee schedules are rationality, predictability, and simplicity, and therefore ease of understanding for both beneficiaries and providers. In addition, a fee schedule system would not involve the maintenance of what amount to individual price schedules for each physician as is required under the current CPR system. Further, fee schedule updating could be accomplished using methods that would allow greater control over annual increases in average price levels than are currently possible under CPR even with the use of the MEI.

The various options that have been reviewed each have their advantages and disadvantages. Fee schedules based on historical data on average approved charges would be fast and simple to construct. There would not be much initial change in approved charges for most physicians, and presumably there would be little initial disruption in the Part B program. Such fee schedules, however, would preserve—if not embed—any existing disparities in payment observed between procedural and nonprocedural services as well as geographic and specialty differentials. Although such disparities and differentials might be addressed and resolved over time, a direct approach to these problems would be preferred by many observers.

In fact, many of those same observers would prefer to develop fee schedules based on analyses of the relative resource costs of individual services. In theory, such a system would have an advantage over current effective payments in that resource cost based rates would be neutral with respect to clinical decisionmaking. In addition, it is argued that such a system would reduce, if not eliminate, the alleged disparities between procedural and nonprocedural services. There is little experience with fee schedules based on this kind of estimate so the effects are uncertain. In any event, construction of a complete fee schedule based on this approach would be likely to be very expensive. Further, it is not clear that the results of such an effort would be as reliable a guide to appropriate Medicare pricing as its advocates contend. Although some concept of resource costs should be included in the consideration of Medicare payment levels, there are so many arguments for including other considerations that even if statistically reliable resource cost estimates could be obtained, they would not provide a definitive guide to relative values.

Consensus development efforts involving physicians and other groups might prove to be a faster method to educe acceptable and meaningful relative values. The acceptability of the results of such an approach, however, is uncertain. What would be expected to be the primary problem would be establishing the relative values of specific procedural and nonprocedural services. The composition of the consensus groups could be crucial, especially given an exercise conducted to produce a budget neutral fee schedule conversion.

The competitive approaches are relatively untried. It would be relatively straightforward to instruct carriers to determine relatively low levels of approved charges representing some specific fraction of current Medicare utilization levels for particular services or even all services. There is no precedent, however, for predicting the aggregate effects on Medicare expenditures, or beneficiary costs in particular and access in general. There are no data, much less studies, that would allow predictions as to whether geographic or specialty or procedural/nonprocedural differences would be reduced or increased under that kind of approach.

Similarly, competitive bidding for physician services or what would be, in effect, bilateral competition between the Government and the medical profession with respect to price are untried in this country. Both might achieve a fee schedule with the general advantages attendant to a fee schedule. That either of such fee schedules might specifically reduce the perceived unwarranted variations in payments in the Medicare program is unlikely although not impossible. Competitive bidding in itself could involve such administrative complexities that trying to tie a series of services to specific relative charge levels would prove daunting. The foreign experience in negotiations between health insurance officials and physician representatives suggests that shifts in relative prices would not be soon forthcoming (162,578).

No one system is entirely superior to all others for the development and evolution of fee schedules. A judicious mix of the various methods might enable the achievement of a variety of goals, including directly addressing the perceived inequities in the administration of benefits under the Part B program. However, pending the acquisition of additional data and the development of more sophisticated models to resolve the question of the changes, if any, in the use of services in response to fee schedule changes, what remains uncertain are the specific effects on Medicare expenditures and beneficiary expenditures, access to services, and quality of care. There is no evidence that such effects would be substantial, but there is also no consensus on whether their net effects would be beneficial or detrimental to either beneficiaries or the Medicare program as a whole.

Chapter 6

Payment for Packages of Services

Words differently arranged have a different meaning, and meanings differently arranged have a different effect.

—*Pascal*

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Chapter 6

Payment for Packages of Services

INTRODUCTION

Packaging is an approach to physician payment that involves redefining the payment unit from the individual service to a broader "bundle" of services (313).[1] This approach could control both costs and utilization by reducing the number of service units billed and encouraging the judicious use of services within packages. Under packaging, the financial risk would be borne by the individual physician or other recipient of payment (547). This chapter examines variations in packages of services and discusses potential effects of packaging alternatives on quality of care, access to care, costs and efficiency, technological change, and administrative feasibility. Also considered in this chapter are the potential effects of paying for physician services via collapsed procedure codes.[2]

One objective of paying physicians a specified rate for a group of services would be to give the Medicare program more control over program costs. Unless the rates for packages were set at the same level as or below the mean of current charges, however, payment for packages of services would not necessarily result in a reduction of Medicare expenditures. In most cases, rates for packages would be prospectively determined and would include ancillary services (e.g., clinical laboratory tests, X-rays, injections) so physicians might think carefully about ordering a marginal test or requesting a consultation.

The major difficulties of paying a rate for a package of services stem from the potential for underuse of needed expensive services or denial of care to very ill and potentially resource-intensive patients. The use of appropriate case-mix measures—measures of the relative frequency with which physicians treat patients with different types of medical conditions—should result in higher payments to physicians who treat more complex patients and should obviate some of the negative effects. Relative to the present customary, prevailing, and reasonable (CPR) Medicare fee screen method, packaging would create situations where physicians might gain or lose income, due to the "averaging effect."[3] So that physicians faced a fixed amount of revenue for each package of services, mandatory assignment would be necessary. Otherwise, physicians would be able to shift the financial risk to Medicare beneficiaries by billing them more than the allowed packaged rate.

Some physicians, for example, surgeons, already provide much care that is paid on the basis of a global or package rate. However, there has been little empirical research testing the applicability of packaging to broader areas of physician payment. To address the lack of research on packaging physicians' services for inpatients, the Social Security Amendments of 1983 (Public Law 98-21) mandated a study by the Department of Health and Human Services (DHHS) to examine the feasibility of using a diagnosis-related group (DRG)[4] type of classification to pay for inpatient services provided by physicians to Medicare beneficiaries. In addition, the Office of Research and Demonstrations in the Health Care

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[1] This chapter uses the term "packaging" synonomously with the term "bundling."

[2] Collapsed procedure codes would not produce a "true" package (319), because the unit of payment under collapsed codes would remain the individual service. Although collapsing procedure codes is compatible with Medicare's customary, prevailing, and reasonable (CPR) payment method (ch. 4) or fee schedules (ch. 5), the concept is discussed here as a means of introducing the concept of packaging.

[3] Relative to the present, paying an average rate for a package of services would reduce payment for some physicians and increase payment for other physicians.

[4] Diagnosis-related groups (DRGs) are groupings of diagnostic categories drawn from the International Classification of Diseases and modified by the presence or absence of a surgical procedure, patient age, presence or absence of significant comorbidities or complications, and other relevant criteria. DRGs are the case-mix measure mandated for Medicare's prospective hospital payment system by the Social Security Amendments of 1983 (Public Law 98-21) (141,489). A later section of this chapter discusses the applicability of DRGs to physician payment.

Financing Administration (HCFA) of DHHS is plannning demonstrations to study packaging physician services to nonhospital as well as hospital settings (540). Planned demonstrations include incorporating payment for physicians' services into hospital DRGs;[5] and paying prospectively for all Medicare Part B services (540).

THE CONCEPT OF PACKAGING

What is a package? As suggested above, a package is a group of related medical services (319). During a patient's visit to a physician, for instance, a comprehensive physical examination may include a record of the patient's blood pressure, some laboratory tests, and a medical history. The visit is clearly a package of functions whether or not it is billed as such (319). As illustrated in figure 6-1, packaging expands the concept of fee-for-service payment by including multiple services in the bundle.

The six variations reviewed in this chapter range from least comprehensive (collapsed procedure codes) to most comprehensive (total episode of care):

- *Collapsed procedure codes.*—The coding system used to pay for physicians' services under Medicare's Part B, the Physicians' Current Procedure Terminology, 4th edition (CPT-4),[6] includes codes for 7,040 procedures.[7] Combining codes for procedures that have only fine distinctions would reduce the number of allowable billing units.
- *Ambulatory-visit package.*—An ambulatory-visit package would incorporate all physicians' services and ancillary services (e.g., clinical laboratory tests, X-rays, and injections) related to one visit.
- *Special-procedure package.*—A special-procedure package would include all or some physicians' services and ancillaries associated with a single therapeutic or diagnostic procedure, such as cataract surgery, extracorporeal shock wave lithotripsy (ESWL), colonoscopy, or magnetic resonance imaging (MRI). If selected diagnostic and therapeutic procedures were paid based on a rate for a package of services, other parts of the system might still be paid by CPR or by a fee schedule.
- *Ambulatory-episode-of-care package.*—A package for an ambulatory episode would include all physicians' services and ancillaries associated with an illness treated in ambulatory settings.[8]
- *Inpatient-episode-of-care package.*—This package would incorporate all physicians' services associated with a hospitalized patient.
- *Total-episode-of-care package.*—A package for a total episode of care would incorporate all ambulatory and inpatient physician services and ancillaries related to an episode of medical care.

As shown in table 6-1, packages can be defined by a number of different variables, including: 1) the unit of payment, 2) case-mix adjustor (if any), 3) recipient of payment, 4) scope of services, 5) approach to payment, and 6) time period. Mitch-

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[5] HCFA's Office of Research and Demonstrations has budgeted $1 million for a study demonstrating and evaluating combined physician/hospital payment for fiscal year 1986 (540).

[6] The CPT-4 coding system, developed by the American Medical Association, lists descriptive terms and identifying codes for reporting medical services performed by physicians. (85).

[7] HCFA's Common Procedure Coding System (HCPCS) also includes codes for nonphysician services, such as durable medical equipment, ambulance services, eyeglasses, rehabilitation services, and injectable drugs.

[8] Medicare now pays the primary physician treating end-stage renal disease (ESRD) patients a fixed monthly payment that is similar to an ambulatory-episode package. The rate is based on a weighted average of dialysis sessions per month, prevailing charges for a medical specialists' brief followup visit for an established patient, and prevailing charges for intermediate followup visits, weighted by national averages of the percentages of patients dialyzed in facilities and at home (48 FR 21254) (see app. C). If patients are admitted to the hospital, physicians are paid on a fee-for-service basis instead of their monthly payment (if a patient is in the hospital 1 day and the physician converts to fee-for-service, the monthly payment is reduced by 1/30), and hospitals are paid under Medicare's prospective payment system for inpatient services. Physicians may elect to remain on the monthly payment during the hospital stay, but the vast majority choose to bill fee-for-service (426). Out-of-package care—any care not related to dialysis—is also paid on a fee-for-service basis, generally to other physicians.

Figure 6-1.—Alternative Methods of Medicare Payment for Packages of Services Provided to a Hypothetical Patient Presenting the Symptom of Extreme Flank Pain[a] [b]

<table>
<tr><th>First office visit: primary care physician</th><th>First office visit: urologist</th><th>Urinalysis</th><th>Intravenous pyelogram (IVP)</th><th>Radiologist service for IVP</th><th>In-hospital radiologist service for KUB X-ray[c]</th><th>Anesthesiologist service for ESWL[d]</th><th>Urologist service for ESWL</th><th>In-hospital urologist visit</th><th>Hospital visits: urologist</th><th>Posthospital office visit: urologist</th><th>IVP or KUB X-ray</th><th>Radiologist service for IVP or KUB X-ray</th><th>Post-hospital office visit: urologist</th></tr>
<tr><td colspan="3">Ambulatory visit</td><td colspan="2">Ambulatory visit</td><td colspan="5" rowspan="2">Inpatient episode of care</td><td colspan="4" rowspan="2">Ambulatory episode of care</td></tr>
<tr><td colspan="5">Ambulatory episode of care</td></tr>
<tr><td colspan="14">Total episode of care</td></tr>
</table>

[a] This is a hypothetical example of how a patient with flank pain might be treated during a total episode of care.

[b] This example excludes a special-procedure package, which would include the services of an anesthesiologist and urologist and the ESWL procedure.

[c] Kidney, ureter, and bladder X-ray.

[d] The facility cost for extracorporeal shock wave lithotripsy (ESWL) would be included in the hospital DRG. A urine culture might also be administered in the hospital, but would be covered by the hospital DRG.

SOURCE: A. Jenkins, University of Virginia Medical Center, Charlottesville, VA, personal communication, Nov. 26, 1985.

ell and colleagues have described these and other variables for defining packages (319).

The *unit of payment* for packages may be a procedure, a visit, or a case. In a sense, packaging would still be a type of fee-for-service payment, but the unit of payment would be expanded, in general, to include more than one service (see fig. 6-1). In the case of collapsed procedure codes, the unit of payment would remain the service. In the case of an ambulatory-visit package, the unit of payment would be the visit. In the case of a special-procedure package, the unit would be either a procedure or a case. Per-case payment, i.e., paying the physician a specific amount for each case regardless of the number of services provided or additional physicians involved, is also applicable to ambulatory-, inpatient-, and total-episode-of-care packages. Per-case payment would usually be adjusted by case-mix measures, such as DRGs.

The purpose of a *case-mix adjustment* is to recognize differing patient needs or resource use. In general, the more comprehensive the package, the more likely that a case-mix measure would be needed. Case-mix approaches can distinguish units of payment by visit or procedure type, diagnosis, or demographics. Age or sex would be an example of another case-mix adjustment. Investigators have also examined reason for visit or admission as a case-mix adjustment (319).

As indicated in table 6-1, with collapsed procedure codes, no case-mix measurement would be necessary. The case-mix for an ambulatory visit could be adjusted by diagnosis, reason for visit, visit type (e.g., new or established patient), or ambulatory visit group. Case-mix for an ambulatory episode of care could be adjusted by ambulatory visit groups, diagnosis, or reasons for visit.

The proper unit for billing ambulatory care is more difficult to define than those for inpatient care (270). For instance, patients visiting physicians' offices for routine hypertension treatment require physician resources different from those required by a patient with uncontrolled hypertension. In addition, principal diagnosis may not be so clear in the office setting as it would be for inpatient care or for ambulatory surgery.

Different types of case-mix measures may be needed for emergency room ambulatory care,

Table 6-1.—Variations in Packages of Services

Variable	Collapsed procedure codes	Ambulatory visit	Special procedure	Ambulatory episode of care	Inpatient episode of care	Total episode of care
Unit of payment	Procedure	Visit	Procedure	Ambulatory episode of care	Inpatient episode of care	Total episode of care
Case-mix adjustor	None	AVGs,[a] reasons for visit, or visit types	Diagnoses, DRGs, PMCs,[b] or severity-of-illness index[c]	AVGs, diagnoses, or reasons for initial visit	DRGs, staging,[d] APACHE,[e] PMCs, severity-of-illness index, or MEDISGRPS[f]	AVGs, DRGs, or ICD-9-CM codes[g] May need new classification system
Recipient of payment	Physician or physician group	Primary physician or physician group	Primary physician or physician group	Primary physician or physician group	Physician, physician group, medical staff, hospital, combined medical-hospital staff	Primary physician or physician group
Scope of services	Procedure	Visit and ancillaries	Physician services and ancillaries included for ambulatory patients but excluded for inpatients	Physician services and ancillaries entire episode of ambulatory care	Inpatient physician services[h]	Inpatient and ambulatory physician services and ancillaries
Approach to payment	Prospective or retrospective	Prospective	Prospective	Prospective	Prospective	Prospective
Time period	Immediate[i]	Immediate	Fixed interval[j]	Episodic or fixed interval	Episodic	Episodic or fixed interval

[a] Ambulatory visit groups (AVGs), a classification system similar to DRGs, define similar visit types in relation to the amount of time a physician spends with a patient (140).

[b] Patient management categories (PMCs) are based on patients' clinical characteristics and severity of illness (586).

[c] The severity-of-illness index reflects the patients' overall severity of illness, not just the severity of each diagnosis (219,220).

[d] Staging was developed to measure the biological progression of an illness within diagnostic categories (173,489).

[e] The Acute Physiology and Chronic Health Evaluation, Modified Version (APACHE) consists of 12 commonly used physiologic measures weighted to produce a total score for an intensive care unit patient.

[f] The Medical Illness Severity Grouping System (MEDISGRPS) groups patients by severity on the basis of data acquired after admission (59).

[g] The International Classification of Disease, Clinical Modification, 9th edition (ICD-9-CM), developed in the late 1970s, is a diagnostic lexicon of 10,241 five-digit codes, that encompass the realm of diseases known at that time.

[h] Hospital ancillaries are assumed to be incorporated in the hospital DRG.

[i] Immediate time period refers to the services related to a single patient-provider encounter.

[j] The services associated with the interval surrounding the procedure.

SOURCE: Adapted from J.B. Mitchell, K.A. Calore, J. Cromwell, et al., "Alternative Methods for Describing Physician Services Performed and Billed," prepared for the Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, November 1983.

physician office visit ambulatory care, and specialized ambulatory care including chemotherapy or ambulatory surgery (270). A study is currently being conducted in California to develop emergency department groups for both hospital and physician costs of emergency room treatment (78).

Investigators have examined the effects of three different case-mix measures on the creation of ambulatory-visit packages. Mitchell and colleagues[9] found that reason for the visit, diagnosis combined with the visit type, and ambulatory patient groups (the name was later changed to ambulatory visit groups, were not superior to diagnosis alone in explaining the variation in services associated with an office visit (319). The number of categories created by the different methods varied significantly. Using diagnosis/visit type produced hundreds of packages; ambulatory patient groups produced 154; and reason for visit produced 14 (319). Substantial variation in services remained even after adjustment for case-mix (319).

The simplest special-procedure packages would be based on collapsed procedure codes and combined services; therefore, case-mix might not need to be adjusted (319). For instance, a package might include the surgeons' services, the anesthesiologists' services, and assistant surgeons' services as well as X-rays. If case-mix were adjusted, DRGs or patient management categories might be used for inpatients, and other categories could be chosen for ambulatory patients. An inpatient episode of care might be classified by DRGs or patient management categories. New classification systems would need to be developed for a total episode of care.

Packaged payment may introduce new administrative and competitive arrangements for physicians depending on who is paid. The *recipient of payment* for a packaged fee, if assignment were made mandatory, could be the individual physician, a single specialty physician group, a multispecialty physician group, a facility, or a combined facility-physician corporate entity.[10] Although Medicare can determine how it will pay for physicians' services, the Medicare program cannot control how physicians are paid within a group setting. For instance, although a group of physicians may bill on a fee-for-service basis, the group may pay its members a salary or offer a salary plus a percentage of income earned above a base figure. How an individual physician is paid bears particular importance for packaging, because the intended positive incentives of packaging, such as those for the judicious use of services, may be diluted if physicians are far removed from the direct payment (364). On the other hand, removing physicians from the negative incentives of a particular payment mechanism, such as for the underuse of services, may be beneficial.

Paying an individual coordinating physician for some of the more complex packages would involve substantial financial risk to that physician. For instance, if a patient's episode of care for myocardial infarction was complicated by another chronic illness, such as diabetes, the coordinating physician would be financially liable for additional visits and payment for other physicians' consultative services. Empirical research has shown that many physicians have small inpatient caseloads and may experience large losses because of random variation in case-mix severity (313). Although a large group of physicians might be better able to handle these variations in payment, an individual physician may have difficulty doing so (320). Payment to a larger entity, such as the medical staff, produces greater opportunity for risk pooling and averaging (314). Medical staffs could form an individual practice association, an organizational form that has become more common in recent years.

The *scope of services* covered by a package may either be narrow or broad (see table 6-1). An example of a package with a narrow scope is an ambulatory-visit package, which is limited to the services associated with one visit to a physician.

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[9] These investigators used the 1979 and 1980 National Ambulatory Care Survey as a means of examining the services associated with different types of office visit packages (319). The National Ambulatory Care Survey asks a nationally representative sample of office-based physicians to provide information on all services ordered, even if the physicians do not provide them. There are a number of limitations to the data: volume of service cannot be determined; no physician fee data are collected; there are no data on patient office followup; no ambulatory department (hospital) information is collected; and all possible ancillary services are not covered.

[10] If assignment remained optional, the beneficiary could also receive the payment.

A special-procedure package has a somewhat broader scope, covering most of the services associated with a single procedure, such as ESWL. An ambulatory-, inpatient-, or total-episode-of-care package would cover an even broader scope of services (including more days and services). A typical inpatient-episode-of-care package could include office visits for a week on either side of the hospitalization (320).[11]

The more comprehensive a package, the less likely it would be that care related to a specific medical condition would be provided outside of the package, and the stronger the incentive for the provider to skimp on services within packages because physicians would be paid a fixed rate no matter how many services they performed. With payment based on a visit or a hospital episode, physicians might provide care in a different site or outside of the package in order to maintain or increase revenue. For instance, a physician might provide laboratory tests to a patient in the office prior to hospitalization. Alternatively, a patient might be discharged earlier than usual from a hospital but be seen more frequently in the physician's office for separate followup visits. The physician's ability to provide care outside of the package would depend on a patient's willingness to return for extra visits or to attend preadmission testing despite the increase in cost-sharing for the patient.

The *approach to payment* for most packages would be prospective, i.e., payment rates for a particular procedure or package of services would be set in advance. As discussed in appendix C, Medicare's current CPR payment system has retrospectively determined rates. With collapsed procedure codes, payment could either be prospective or retrospective.

Under collapsed procedure codes, physicians could continue to be paid by the current fee screen method or by a fee schedule. Determining payment for comprehensive packages, such as ambulatory-, inpatient-, or total-episode-of-care packages, would be more complex, requiring, first, the selection of an appropriate classification system for patients, diseases, procedures, cases, or episodes, and second, the determination of relative weights for various categories within the classification system.[12] To create a payment schedule, these weights would have to be converted to prices by standardized rates (conversion factors). Adjustments might be made for differences in costs of living among areas, or the payment schedule could consist of a set of national rates.

The *time period* covered by a package could be either immediate, fixed interval, or episodic, depending on the package. An immediate time period would incorporate all services associated with one patient encounter with a physician (e.g., an ambulatory visit for essential benign hypertension). A fixed-interval time period might include all services for a defined period of time (e.g., a 1-month ambulatory-episode-of-care package for hypertension). A variable episodic situation would depend on the length of the time needed to "cure" an illness, such as a strep throat, or to recover from a operation, such as cataract surgery.

IMPLICATIONS OF ALTERNATIVE METHODS OF PAYMENT FOR PACKAGES OF SERVICES

Certain implications are common to payment for all of the packages of services. Prime among these is underuse of services within packages. Because of this potential for underuse, packaging might adversely affect quality of care. In the case of services that appear to have been overused in the past, such as certain laboratory tests, the tendency for underuse might actually improve quality of care. But if the incentive for underuse affects services that have not been overused in the past, quality of care problems might occur.

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[11] The ancillary services for an inpatient episode of care are assumed to be included in the hospital's DRG payment.

[12] One method of determining relative weights would be to base them on historically approved physician charges (242).

Mandatory assignment would reduce participation in the Medicare program by physicians whose approved charges had been above the packaged rate. The access to care of beneficiaries who used those physicians could be reduced accordingly. In the absence of mandatory assignment, some physicians would refuse assignment for cases likely to be complex and more costly than the packaged rate, such as cataract surgery for diabetic beneficiaries.

Efficiency would be encouraged within packages but not across packages. The cost to Medicare and to society under packaging would depend on the extent to which physicians shifted care outside the package and the extent to which care for more complicated patients was shifted to other non-Medicare payers in either the private or public sector. The costs to Medicare beneficiaries under packaging would depend on the nature of their illness and on whether assignment was mandatory. If assignment was mandatory, beneficiaries would know their costs in advance and would be charged the same amount no matter how many services were used within a package. If payment rates were set at the mean, beneficiaries with less complex and expensive illnesses would pay more and those with more complex and expensive illnesses would pay less than they would have in the past.

Payment rates could be set at percentiles lower than those currently used to calculate approved charges in an attempt to reduce Medicare expenditures. Lowered payment would exacerbate potential problems such as underuse of services within packages or access difficulties for complex, expensive patients.

Different incentives for utilization of care would exist for beneficiaries and physicians. Because beneficiaries would face fixed and predictable cost-sharing for specific packages, they might request additional services. Physicians would have an incentive to provide the least expensive care to their patients consistent with good quality. This incentive would lead physicians to consider more carefully and probably to reduce the use and expenses of ancillary and consultative services, such as additional laboratory tests and assistants at surgery. Packaging is likely to encourage the development of cost-saving procedural technologies that would save physician time.

Over time, either collapsed procedure codes or packaging would be easier to administer than Medicare's current payment system because fewer billing categories would exist. In the short run, administrative difficulties might arise for carriers, physicians, and beneficiaries as the changes were implemented. Since the coordinating physician or other recipient of payment would bear the financial risk for the packages of services provided, these physicians would have major new administrative responsibilities, such as negotiating payment rates with other physicians and monitoring utilization within packages.

Collapsed Procedure Codes

Why collapse procedure codes? CPT-4, which is the coding system used for the physicians' services portion of HCFA's Common Procedure Coding System (HCPCS), has been criticized as being overly detailed, and allowing physicians too much latitude in billing (319). In fact, this latitude may allow physicians to bill Medicare or private insurers for an upgraded service without really altering the content of the service (because two codes may have minimal distinctions) and to bill separately for each test (319).

The number of CPT codes increased 238 percent between 1966 (2,084 codes) and 1985 (7,040 codes) (85,319,328). To some degree, coding increases were influenced by the rapid increases in medical knowledge and technological developments. As new procedures, such as fiberoptics or ESWL, are developed, terminology is updated to provide a means for reporting on and reimbursing for them. Substantial increases came from fragmenting procedures into a number of detailed codes in place of a single descriptor (569). When

California converted from the 1964 California relative value scale to the expanded 1969 version for Medicare billing purposes, billed or approved charges attributable to terminology changes increased 5 percent for office visits and 7 to 8 percent for hospital visits (442).

If procedure codes were collapsed, the 11 existing codes for visits or the 9 for chest X-ray might be reduced to fewer categories for payment (see table 6-2). A group of experts could be convened to determine which codes to collapse on the basis of current codes used. For example, payment could be based on the most frequently billed code for a particular category (569). In other cases, a group of codes being considered for collapsing might have an equal or near equal distribution, and calculations of the payment rates could be based on a weighted average (319). Physicians could either continue to bill with the multitude of codes as they do now (and codes could be collapsed at the carrier level)[13] or they could be given new code books.

The potential effects of collapsed procedure codes on quality of care, access to care, costs and efficiency, technological change, and administrative feasibility are discussed below.

Table 6-2.—Procedure Codes for Office Medical Services (Visits) and Chest X-Rays

Codes for office medical services (visits):	
New patient:	
90000	Brief service
90010	Limited service
90015	Intermediate service
90017	Extended service
Established patient:	
90030	Minimal service
90040	Brief service
90050	Limited service
90060	Intermediate service
90070	Extended service
90080	Comprehensive service
Codes for chest X-rays:	
71010	Radiologic examination, chest; single view, frontal
71015	stereo, frontal
71020	Radiologic examination, chest, two views, frontal and lateral;
71021	with apical lordotic procedure
71022	with oblique projections
71023	with fluoroscopy
71030	Radiologic examination, chest, complete, minimum of four views;
71034	with fluoroscopy
71035	Radiologic examination, chest, special views (e.g., lateral decubitus, Bucky studies)

SOURCE: S.B. Clauser, C.M. Fanta, A.J. Finkel, et al. (eds.), *Physicians' Current Procedural Terminology, 4th Edition, CPT-4* (Chicago, IL: American Medical Association, 1985).

Quality of Care

Since payment for physician services under collapsed procedure codes would be similar to the current payment system, the payment level would be more likely to affect quality of care than the collapsing per se. If only 3 visit codes instead of the current 11 were allowed and payment rates were set at the mean,[14] physicians who earned less per visit than they had in the past might either provide unneeded laboratory tests or bill separately for previously included laboratory tests (332). In addition, some physicians might reduce the time spent in face-to-face contact with their patients in order to see more patients per day. These incentives would not apply to those physicians who earned more per visit.

Access to Care

If payment rates with collapsed procedure codes appeared reasonable to physicians and if specialists were still allowed to bill different rates from generalists, access to care might remain stable (319). Specialty-specific billing in certain ways serves as a partial proxy for case-mix adjustment (319). Without specialty-specific rates, 80 to 90 percent of the specialists in one study would have lost money under collapsed procedure codes relative to the present system (319). If payment rates did not appear reasonable to physicians and specialty-specific billing was not maintained, patient access to care might suffer.

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[13] In the past, carriers collapsed codes by default. From the inception of the Medicare program until HCPCS was required in 1984, carriers used different coding systems: 1) one of two early versions of the California relative value scale, 2) a national Blue Shield Association coding system, 3) CPT, or 4) carrier adaptations of coding systems, such as the 1964 California relative value scale. Those carriers using systems other than CPT might have been billed by physicians with CPT codes. In order to pay physicians, carriers would have needed to collapse the CPT codes to fit into the California Relative Value Studies scale (569). Some carriers may have collapsed codes on a predetermined basis, and others may have done so on an ad hoc basis (55).

For the first year of HCPCS, carriers are also, in effect, collapsing payment. Carriers who in the past used coding systems with fewer visit codes than CPT-4, would have only historical charges for those codes. Therefore, the carriers would have to assign a visit code to one of the categories for payment purposes (58). By the second year, charges would then exist for the 11 CPT-4 visit categories.

[14] If payment rates for all packages were set at the median, some of the skewing that an average produces might be avoided (569).

Analysis of South Carolina Part B data from 1981 showed that overall assignment rates for collapsed office visit codes would fall only slightly if specialty-specific billing were maintained (319). The Medicare market share in an area and in a physician's practice might determine whether access is a problem or not (319). In South Carolina, one-fifth of the physicians, for instance, provided one-half of all visits to Medicare beneficiaries (319). Medicare would be able to exert considerable leverage over these physicians.

Costs and Efficiency

Although collapsed procedure codes could control the rate of increase of Medicare expenditures, they would not necessarily reduce Medicare expenditures. The effect of collapsed procedure codes on Medicare expenditures would depend on the nature of the collapsed codes, utilization patterns, and the patient's severity of illness. With payment rates set at the mean, the effects would be similar to those described above.

Mitchell and colleagues collapsed 12 codes for colonoscopy[15] (a type of colon examination) in two different ways (319):

- into a single collapsed procedure code (with a weighted average of charges for all 12 procedures), and
- into two different codes based on the extent to which the fiberoptoscope was inserted during colonoscopy.

With a single code for all 12 procedures, the price for a colonoscopy was $247. With two codes based on distance into the colon, the price was $165 for the less complicated procedure and $293 for the more complicated procedure (see table 6-3). If all 12 colonoscopy codes were collapsed into one, physicians who lost money relative to the current system would be paid $21 to $102 less than at present; physicians who gained money relative to the present system would earn between $14 and $106 more. Medicare might save the amounts listed for physicians who lost income relative to the present on colonoscopies that go higher into the large intestine. Conversely, Medicare would have some losses for lower level colonoscopies. Should present assignment rules continue, a beneficiary would be likely to have higher cost-sharing liability if a simple colonoscopy was performed but a lower liability for a colonoscopy higher into the large intestine. The same would apply to Medicare program costs. If assignment was not mandatory, physicians who stood to lose money on particular cases might refuse assignment in order to be able to bill patients for additional amounts.

Mitchell and colleagues also collapsed 11 visit codes in two different ways (319). In the first situation, 11 visit codes were collapsed into 2 types of visits according to the type of patient seen (new or established). In the second situation, the 11 visit codes were collapsed into 5 codes (2 for new patients and 3 for established patients). Rates were set using a weighted average of charges in the various visit categories. When specialty was taken into account and 5 codes were used, the amounts paid to physicians would have been comparable to the present. Results similar to those for colonoscopy occurred when visit codes were all collapsed into one code. Patients' cost-sharing liability would rise if their visits were classified in a category with a higher average charge, and cost-sharing liability would fall for patients in a category with a lower average charge than in the past.

Technological Change

The incentives for technological change under collapsed procedure codes would be similar to those under the present system. If the collapsing of visit codes was coupled with the inclusion of certain laboratory tests in the visit rate (as was done in Quebec (28)), physicians would have an incentive to use fewer and less expensive laboratory tests.[16]

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[15] The newest edition of CPT-4 lists 13 codes for colonoscopy.

[16] In Quebec, Canada, between 1971 and 1976, the average number of base services such as visits to physicians, provided to patients remained stable even with fee constraints and rising physician expenditures. But the number of associated diagnostic and therapeutic services accompanying base services rose 53 percent (28). And the average fee per examination rose 20 percent more than aver-

(continued on next page)

Table 6-3.—Collapsed Procedure Code Package: Diagnostic Colonoscopy

CPT-4 code	Procedure	Relative frequency (n = 358)	Usual charge	Medicare approved charge	Beneficiary 20-percent copayment if deductible is met
45360	Colonoscopy, fiberoptic, beyond 25 cm to splenic flexure: diagnostic procedure	0.28	$188	$141	$28.20
45365	with biopsy and/or collection of specimen for cytology	0.05	251	222	44.00
45367	with removal of foreign body	0.00	—	—	
45368	with control of hemorrhage	—[a]	300	200	40.00
45370	with removal of polypoid lesion(s)	0.03	388	306	61.20
45371	with retrograde lavage (e.g., water pik)	0.00	—	—	
Collapsed procedure (CPT-4 codes 45360-45371) package price		0.36	$211	$165	$33.00
Coefficient of variation			46.7%	46.6%	
45378	Colonoscopy, fiberoptic, beyond splenic flexure: diagnostic procedure	0.33	$315	$267	$53.40
45379	with removal of foreign body	0.01	267	233	46.60
45380	with biopsy and/or collection of specimen for cytology	0.12	350	283	56.60
45382	for control of hemorrhage	—[a]	400	275	55.00
45385	with removal of polypoid lesion(s)	0.18	452	349	69.80
45386	with retrograde lavage (e.g., water pik)	0.00	—	—	
Collapsed procedure (CPT-4 codes 45378-45386) package price		0.64	$359	$293	$58.60
Coefficient of variation			29.1%	20.6%	
Total collapsed procedure (CPT-4 codes 45360-45371, 45378-45386) package price		1.00	$306	$247	$49.40
Coefficient of variation			48.7%	45.6%	

[a] Frequency less than 1 percent

SOURCE: J.B. Mitchell, K.A. Calore, J. Cromwell, et al., "Alternative Methods for Describing Physician Services Performed and Billed," prepared for the Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, November 1983.

Ambulatory-Visit Package

As has been mentioned previously, principal diagnosis is not so easily defined in the ambulatory setting as in the inpatient setting (270). The implications of paying for ambulatory visits in package form are discussed below.

Quality of Care

Because of the potential for underuse of ancillary services within packages, payment by ambulatory-visit packages might adversely affect quality of care. Incentives for underuse of needed services, however, would be tempered by the current malpractice climate, by physician's ethics (79), and by the fact that physicians see in-office provision of laboratory tests as a patient convenience (80).

In order to maintain consistent levels of payment or to increase payment levels, physicians might request that patients return for more ambulatory visits than in the past. Since these return visits would increase beneficiary cost-sharing and time costs, beneficiaries might resist return visits. Physicians might avoid the more costly patients. Alternatively, physicians might see patients for a shorter time per visit in order to see more patients per day.

Including multiple physician charges in an ambulatory-visit package might discourage the primary physician from requesting specialist services (94). If these additional specialist visits had been needed in the past, concerns about the quality of care would be raised. On the other hand, if consultant services had been overused, then little effect on quality of care would be noted.

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age fee schedule increases as physicians began billing for an increasing number of higher priced complete examinations as opposed to the lower priced simpler examinations (28). To address some of these issues, in 1976 a new fee schedule was negotiated with higher rates, but with collapsed visit codes and some ancillaries, such as certain clinical laboratory tests, included in the exam fee. (28).

If payment for physician services provided to inpatients was perceived to be less restrictive than payment for ambulatory care, physicians might hospitalize some patients for tests that could otherwise be performed on an ambulatory basis. Physicians' ability to hospitalize patients unnecessarily would be limited by Medicare's prospective payment system for hospitals and the monitoring responsibilities of utilization and quality control peer review organizations (PROs).[17]

Access to Care

Access concerns outlined at the beginning of this section would apply to ambulatory-visit packages.

Costs and Efficiency

Within ambulatory-visit packages, but not across packages, program expenditures would be controlled. The control of total Medicare expenditures with ambulatory-visit packages would depend on the degree to which physicians encouraged revisits or billed for a higher level of service.

Some increase in beneficiary cost-sharing could occur if revisit rates increased. To prevent an increase in their liability, however, beneficiaries might avoid revisits. In addition, beneficiaries who were "below average" for the number of ancillaries received for a visit in the past might have a higher cost-sharing liability. The "above average" ancillary users might have a lower cost-sharing liability than they did in the past.

Technological Change

In order to conserve on the costs of ancillary services included in an ambulatory-visit package, physicians might be motivated to adopt new low-cost laboratory devices (332). Physicians might also be motivated to reduce the amount of laboratory testing within a visit package (332).

Use of new, expensive technologies such as MRI would be greatly discouraged within an ambulatory visit (234). Physicians wishing to control costs within ambulatory visits would be likely to suggest another visit and to avoid using expensive technologies.

Special-Procedure Package

For some physicians, special-procedure packages would represent only a slight change from the current payment system. Surgeons, for instance, have performed surgery as part of what amounts to a package for years, since their pre- and post-hospitalization visits and the actual procedure are included in their fees. Some special procedure packages could address the problem of multiple physicians' (e.g., a surgeon and an anesthesiologist) billing for one procedure. Other special-procedure packages could address the problem of physicians' billing for both a visit and a procedure (e.g., when an MRI scan is administered to a patient, the patient is charged for the scan itself as well as the visit).

The attending or primary physician might resist the special-procedure package alternative because the primary physician would have to negotiate fees with other physicians and would bear the financial risk of services included in the package, such as payments to other physicians (319). Certain procedures can be performed either in a hospital setting or an ambulatory surgery center. Payment for special-procedure packages might encourage fee bargaining among physicians and might result in less hospital use. For instance, if a surgical procedure package were created, the surgeon might negotiate with an anesthesiologist or a nurse anesthetist to obtain a favorable fee. In addition, should the facility fee be included in the package, physicians might seek the least costly facility to perform a procedure. Because special-procedure packages would change the way in which hospital-based physicians are reimbursed, such physicians might resist this approach.

The potential effects of special-procedure packages on quality of care, access to care, costs and efficiency, technological change, and administrative feasibility are discussed below.

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[17] PROs must identify and meet objectives in five areas: 1) reducing unnecessary readmissions due to previously substandard care; 2) assuring provision of medical services, which if not given, would have significant potential for causing serious patient complications; 3) reducing the risk of mortality associated with selected procedures or conditions requiring hospitalization; 4) lowering unnecessary surgery; and 5) reducing avoidable postoperative complications (489).

Quality of Care

In order to keep costs down within special-procedure packages, physicians might seek to use the least costly services. Surgeons, for instance, might choose the least costly anesthesiologist. There is no evidence of a relationship between quality of care and high-charging physicians; therefore, if the coordinating physician sought lower cost providers, there might be minimal effects on quality. Use of assistant surgeons might also be reduced as a means of controlling the costs of resources used within the package. In some cases, the use of assistant surgeons might be unnecessary, and, no quality problems would ensue.

As has been mentioned with other packages, to the extent that laboratory tests have been overused, a reduction in the number of tests would improve quality of care (332). The exact volume of services and choice of testing location would depend on the relative marginal costs and benefits of various tests (332).

Should cataract surgery, for example, be paid as a special-procedure package, low-cost interocular lenses would be most acceptable to physicians. On the other hand, new, better quality, high-cost interocular lenses might not be adopted by physicians even if their costs would fall over time, because the initial costs of lenses would be high and would take funds from the package price (161).

Access to Care

Special-procedure packages might encourage physicians to refuse care for patients with multiple medical problems out of concern that the financial risk would be too great. Appropriate case-mix measures to adjust for severity of illness would be needed to protect access to care for the more complicated patients. Access problems might also be avoided by a well-defined policy for unusually resource-intensive patients (an outlier policy).[18] If codes were collapsed to create special-procedure packages, it might be advisable to maintain specialty differential payment in order to protect access, because specialty-specific billing has served as a proxy for case-mix adjustment, in some circumstances paying physicians for more complex cases at a higher rate (319).

If only some procedures were packaged, physicians or facilities might specialize either in well-paid packages or in procedures that were not packaged. Specialization might lead to regionalization of facilities, which might reduce geographical access. MRI, for instance, might be regionalized because of high initial costs.

Costs and Efficiency

The effects of averaging prices noted with other packages would also be apparent with special-procedure packages. Mitchell and colleagues analyzed South Carolina 1981 Medicare Part B claims data and found that the average package price for upper gastrointestinal endoscopy by surgeons would be $226.30 versus $190.75 when performed by internists. An average price for all physicians would be $203.94, $13 more than the average for internists and $23 less than the average for surgeons. A diagnostic cystourethroscopy package done in a hospital was priced at $154 and in an office at $81. An average package price for either inpatient or ambulatory care would be $131, thus giving the physician an incentive to do the procedure in the office if it was less costly (319).

If Medicare were to price special-procedure packages low, there might be a tendency for physicians to shift costs to other payers. For instance, ESWL involves high initial capital costs. If individuals or facilities knew that a large market existed among other payers, then they might be willing to take a loss on Medicare patients, because costs would be borne by other patients or third-party payers.

Technological Change

Special-procedure packages would give physicians an incentive to adopt new cost-saving and potentially beneficial technologies such as ESWL. A package for ESWL might encourage the development of less expensive machines or the use of the least expensive alternative to hold costs down within a package. If packages included the average cost for an operative procedure, there would be an incentive to use ESWL in place of surgery and still receive a higher fee (431).

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[18] An outlier would be a case with unusually high or low resource use. An outlier policy could adjust a physician's payment for patients with very high or very low resource use.

For an emerging, expensive technology such as MRI, physicians might compete to be the "package" physician. To keep the entire fee, neurologists might choose to do the MRI scan on their own instead of requesting the additional help of a radiologist (234). Physicians would also have an incentive to use more cost-effective clinical laboratory services within packages.

Ambulatory-Episode-of-Care Package

Packaged payment for ambulatory episodes of care would give physicians an incentive to control use of and expenditures for services that may have minimal benefit, including ancillaries and consultant physicians. The effects of ambulatory-episode-of-care packages on quality of care, access to care, costs, technological change, and administrative feasibility are discussed below.

Quality of Care

The effects of ambulatory-episode-of-care packages on the use of ancillary services would be comparable to the effects with other packages. Incentives might also exist for physicians to cut back on the use of consultant services (if these services were included within the package), and to perform procedures or to evaluate test results without the assistance of consultants when they might normally be used (194). In many cases, physicians do evaluate their own test results.

Within an ambulatory episode of care, some incentive would exist for physicians to reduce the average number of visits. In addition, physicians might choose to reduce the time spent with individual patients and to see more patients in a day.

Access to Care

If assignment were required and payment rates for ambulatory-episode packages seemed equitable to physicians, access might be similar to that under the current system. One investigator classified assignment patterns of physicians treating hypertension patients into three categories: always takes assignment, sometimes takes assignment, and never takes assignment (319). Packages for ambulatory episodes were created by using claims and survey data. Physicians who had always taken assignment had average package prices 62 percent higher than physicians who never had taken assignment ($152 vs. $94) because of greater use of ancillary tests (319).

Physicians who had sometimes taken assignment within the same package averaged package prices 50 percent higher than physicians who had always taken assignment ($229 vs. $152) and 1.5 times higher than physicians who had never taken assignment ($229 vs. $94) (319). Physicians who never took assignment accounted for 63 percent of total charges, and 24 percent of total charges were taken on assignment by other physicians, leaving only 13 percent of other physicians' charges unassigned (319). If assignment were mandatory, close to half of the physicians in Michigan would have to reevaluate their decisions to never accept assignment (319).

If a physician were responsible for a significant amount of chronic care, accessibility might be reduced for the more complicated patients. The physician might also wish to avoid a significant loss on patients with multiple conditions. Some access problems might be avoided if case-mix adjustment was adequate and a well-articulated outlier policy was created.

Costs and Efficiency

The effects that ambulatory-episode-of-care packages would have on costs to beneficiaries, the Medicare program, and society are similar to those with other packages.

Studies by Mitchell and colleagues and by Walden found substantial variation in resource use and costs in potential episode packages, particularly for chronic diseases (319,562), and Mitchell, et al., recommended that packages be defined by a fixed-interval of time (319). The packages that these investigators created for hypertension (including ancillaries but excluding hospital services) were similar in price, although the data they used were from different years (see table 6-4). Using Michigan 1981 claims data, Mitchell, et al., created packages for two chronic conditions commonly found in the Medicare population: essential benign hypertension and diabetes mellitus.

Table 6-4.—Ambulatory Episodes of Care: Package Prices for Essential Benign Hypertension

Source	Package	Package price
Mitchell, et al.[a]	Total ambulatory-episode package[b]	$133.67
Walden[c]	Total ambulatory package[d]	$ 74.39
	Total ambulatory-episode package[e]	$124.83

[a] Based on Michigan 1981 Medicare Part B data.

[b] Total package price is a weighted average of all physician charges for the 3-month period.

[c] Based on household data from the National Medical Care Expenditure Survey, 1977.

[d] This ambulatory package includes visits to the package physician, other physicians, and nonphysicians. It differs from Mitchell and colleagues' ambulatory-visit packages and ambulatory-episode packages.

[e] This ambulatory-episode package includes visits to the package physician, other physicians, nonphysicians; and prescribed medicines and sundries.

SOURCES: J.B. Mitchell, K.A. Calore, J. Cromwell, et al., "Alternative Methods for Describing Physician Services Performed and Billed," final report prepared for the Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, November 1983; and D.C. Walden, "Paying Several Physicians for Treating an Episode of Illness," presented at the Annual Meeting of the American Public Health Association, Anaheim, CA, Nov. 13, 1984.

Physicians' services and ancillaries were included in the package. The time interval of the disease-specific episode was 3 months. Visits to the primary physician accounted for 27 percent of total costs, and ancillary services (mostly laboratory tests) accounted for the remainder. Almost two-thirds of the care provided during the 3-month period for both the hypertension and diabetes packages was for care unrelated to diabetes or hypertension. Therefore, the potential for package fragmentation exists. Although the average physician charges over a 3-month period for diabetes and hypertension were $134 to $140 respectively, the charges ranged from a low of $7 to a high of $3,400.

With an ambulatory-episode package, physicians assigned to packages by the researchers were likely to be underpaid or overpaid significantly, and specialty did not necessarily explain the variation. Because significant out-of-package care existed, either a method for handling out-of-package care could be developed or a time-interval ambulatory-care package would need to be established (319).

Using 1977 National Medical Care Expenditure Survey data,[19] Walden described similar results (562). He examined four different packages for diabetes, the common cold, pneumonia, and hypertension. Most cases involved one physician. In the case of chronic disease, visits for care unrelated to the chronic disease were fairly common. In many cases, the primary physician handled much of the care unrelated to the specific condition. Much of the variation associated with a patient's care related to the number of visits to the package physician and to nonphysician providers and to the use of laboratory tests and X-rays. Volume of service was found to be the most important variable associated with expenditure variation. Whether a patient had more than one condition was also found to be a significant factor in services used for a chronic disease, such as hypertension.

With the package price set at the mean, only 5 to 7 percent of the packages would be paid at current fee-for-service prices: 70 percent would be set higher than the average and about 25 percent would be set lower. On the whole, physicians with a large proportion of chronic disease patients would have to absorb costs of care above the mean payment. Physicians treating a disproportionate share of elderly patients with chronic conditions might question the equity of their payment, because they would more likely have to absorb losses. Access to care would then become an issue, as physicians might refuse to treat elderly chronically ill patients (562).

Technological Change

Ambulatory-episode-of-care packages might provide an incentive for development of cost-effective laboratory devices for the office. In order to conserve on the number of visits within episodes, physicians might choose to provide laboratory tests within the office if the machines could be purchased at lower prices. This might encourage the development of lower cost analyzers for in-office use (332).

Physicians might be financially neutral about adoption and use of preventive technologies, such as pneumococcal vaccination, traditionally provided in ambulatory settings. The payoff—better health for beneficiaries—might not occur in any one particular ambulatory episode of care.

Adoption of new, potentially efficacious technologies such as MRI might be slowed if such a diagnostic procedure were to be included in the ambulatory-episode package (234). Although MRI's usefulness for patient care and diagnosis has not been entirely determined (234), if the procedure were more expensive than alternatives, and if it were included in the package rate, incentives to avoid its use would exist. To the extent that MRI would have helped in patient care, quality of care would suffer (234).

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[19] This data set has many advantages because it includes patients of all ages, represents care in all 50 States and the District of Columbia, and allows construction of episode-of-illness files. The disadvantages include the fact that questionnaire respondents defined the content of packages. In addition, the data did not permit determination of the primary physician responsible for the patient's care.

Inpatient-Episode-of-Care Package

Global payment for all physicians' services associated with a single episode of inpatient care is sometimes termed payment by "inpatient physician DRGs."[20] DRGs were originally created as a means of monitoring hospital utilization and are the basis of payment under Medicare's prospective payment system for inpatient hospital services (141,489).

Payment for packages of physicians' services for inpatient episodes of care could take various forms:

- Payment for all physicians' inpatient services based on physician DRGs.
- Payment for surgical inpatient services based on physician DRGs.—All physicians' services for surgical care would be paid by physician DRG. Medical services would be paid by fee schedule or CPR.
- Payment for the services of hospital-based physicians (e.g., anesthesiologists, radiologists, and pathologists) as part of a hospital DRG.—Hospital DRG rates would be recalibrated to reflect the services provided by hospital-based physicians.

Two studies have created inpatient physician DRGs using claims data. In one study, Mitchell, et al., expressly examined the feasibility of using physician DRGs as a means of paying for inpatient physician care (321). Hospital episodes were constructed with 1982 data from four States (Michigan, New Jersey, North Carolina, and Washington). The episodes included all physician services provided during a hospital stay and physician services provided the week before and the week after the hospitalization (313,321). In a second study, West, et al., explored methods that might be employed in merging Part A and Part B data (571).

Some investigators have suggested that physicians could be paid by DRG for inpatient surgical care and by either the current CPR system or by a fee schedule for medical services. Mitchell, et al., for example, suggest that because physician charges in surgical DRGs are relatively homogeneous, physician surgical DRGs could be adopted (320). But West, et al., suggest caution in adopting any DRG type of payment because payments within DRGs are not sufficiently homogeneous (571). West, et al.'s, findings indicated that "although payments within physician surgical DRGs may appear to be slightly less variable than medical DRGs with respect to their arithmetic averages, their absolute variability (standard deviation) in dollars is greater" (571). Among 67 high-volume medical DRGs in South Carolina during 1981, the highest average charge for a DRG was 2.2 times the lowest. On the other hand, for surgical DRGs, the highest average charge was 23 times than the lowest (571).

The option of paying for the services of hospital-based physicians as part of the hospital DRG payment has not been studied. Including the services of hospital-based physicians in the hospital DRG payments has certain advantages. Hospital-based physicians generally see patients or examine specimens at the request of other physicians. Because patients rely on referrals to these physicians, mechanisms intended to encourage greater competitive price-shopping by patients would not be effective. Since many hospital-based physicians earn some portion of their income from salary or contracts with hospitals, the change to more direct control from hospitals would not be drastic. Hospitals would then have greater incentives to negotiate lower rates with these physicians (469).

The history of payment arrangements for hospital-based physicians is different from that for other physicians, and payment arrangements have differed for radiologists, pathologists, and anesthesiologists. In 1982, the Medicare program introduced new complexities into hospital-based physicians' relationships with hospitals by eliminating combined billing and requiring that all medical professional services be billed and paid for under Part B of Medicare.[21] In reaction to the original Medicare legislation and subsequent amendments, hospital-based physicians began a gradual transition to fee-for-service compensation. The American College of Radiology explicitly encouraged its members to move in that direction (268). Since the implementation in October 1983 of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) (Public Law 97-248) and Medicare's prospective payment system for inpatient hospital services, the trend to fee-for-service among radiologists has accelerated (123).

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[20] Patient classification systems other than DRGs may be more appropriate for describing a patient's severity of illness, but they have not yet been analyzed for the purposes of physician payment. Possible alternatives include patient managment categories, staging, severity of illness, medical illness severity grouping system, and the acute physiology and chronic health evaluation instrument.

Among pathologists, there have been increases in both fee-for-service and salaried compensation but not in arrangements by which they receive a percent of their billings. Reimbursement per unit of service tends to be smaller in pathology than in radiology, so the per unit expenses of billing for fee-for-service practices are relatively higher for pathologists than for radiologists. Therefore, pathologists might be more logically inclined to salaried practice (450). TEFRA's most severe limitations are on the billing practices of pathologists, by defining almost all clinical laboratory tests as Part A services not reimbursable on a charge basis. Under TEFRA's regulations, clinical laboratory services meeting very specific criteria can be considered reimbursable under Part B; all other clinical laboratory services are reimbursed under Part A. All anatomical pathology services are considered professional services and must be paid for on a reasonable charge basis under Part B (see ch. 3).

Anesthesiologists are predominantly fee-for-service practitioners who provide services directly to patients. In this respect, they are more similar to office-based physicians than other hospital-based physicians. A study in 1979 indicated that 77 percent of anesthesiologists were paid on the basis of fee-for-service, 19 percent were salaried, and 4 percent used the percentage of departmental revenue as their method of compensation (451). In former years, the American Society of Anesthesiologists required as a condition of membership that billing be on a fee-for-service basis unless the physician was a government employee. Following the intervention of the Federal Trade Commission, the Society amended its rule in 1980, but continues to advocate fee-for-service as the method of compensation (428).

Quality of Care

Packaged payment for an inpatient episode of care contains incentives for underuse of consultants. As has been noted previously, to the extent that specialists' consultations have been overused in the past, a reduction in the use of consultants would not adversely affect quality of care. Evidence is equivocal as to whether consultations improve quality of care, but a positive relationship seems to exist (275). Methodological problems of studies prevent clear-cut interpretation of many of the studies on consultation (275). Some States (e.g., New Jersey) use all physician resources for inpatients, including consultants, at a higher rate. Whether increased resource use at that level adds to quality of care is unclear (320,321).

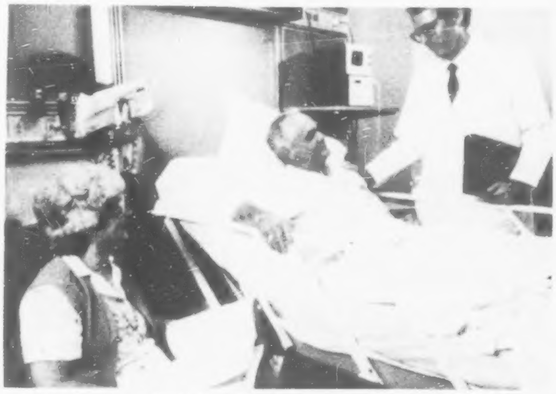

Photo credit: American College of Physicians, HEALTHSCOPE film series

Payment for an inpatient-episode-of-care package would contain incentives to reduce the use of referral services, such as those of consultant physicians.

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[21] Although the congressional intent to separate physician administrative charges (Part A) and physician clinical charges (Part B) was in the initial Medicare legislation, carriers differed in their interpretations of how certain charges were handled. The Tax Equity and Fiscal Responsibility Act (TEFRA) (Public Law 97-248) (Section 112) mandated the separation. In addition, TEFRA eliminated a requirement that Medicare pay 100 percent of the reasonable charges for pathology and radiology services delivered to hospital inpatients. TEFRA also eliminated combined billing (48 FR 39740), which allowed hospitals to bill for the services of pathologists and radiologists.

If under packaged payment surgical cases were more highly paid than medical cases (as they are under Medicare's prospective payment system), some patients might have surgery earlier than in the past (before certain medical procedures are tried). This change might affect the quality of patient care if a medical treatment would have been successful.

If physician inpatient care were paid by DRG, a physician's decision to examine all avenues before deciding on a diagnosis might be influenced by the relative payment rates for different DRGs (233). In the case of a pneumonia patient, if the exact cause of a disease were found, the patient might then be assigned to a more lucrative DRG. The physician's marginal gain from an additional diagnostic test might therefore exceed the marginal cost (233). On the other hand, an anemic patient might be treated initially with iron supplements, because determining the exact cause of the anemia would not change the patient's assignment to a particular DRG. Only if that treatment failed would an exact etiology of the disease or another treatment be tried (233).

Patients might be discharged from the hospital, if their conditions allowed, and then readmitted at a later date for additional procedures. PROs currently review readmissions to the same hospital for the same diagnosis within 7 days of patient discharge. But patients who entered another hospital, were admitted to the same hospital for related but not the same causes, or were readmitted after 7 days would not be detected.

If payment were more restrictive for inpatient services than for ambulatory services, physicians might change the setting of care to ambulatory, and patients who needed inpatient care would suffer. On the other hand, patients whose hospitalization was questionable could benefit.

Access to Care

If assignment was mandatory under payment for an inpatient episode of care, the decision to participate in the Medicare program might be made by physician groups, including medical staffs. Since the financial risk of paying an individual physician for an inpatient episode of care is great, investigators have suggested that a larger entity, such as a single-specialty group or a multispecialty medical staff (perhaps in the form of an IPA), could be the recipient of payment (320). The larger the size of the physician group, the greater the potential for loss of income if mandatory assignment was refused. If mandatory assignment was accepted, access might be improved. But in areas with few hospitals, if a medical staff chose not to accept assignment, significant access problems might occur.

Hospital-based physicians who could realign their market might choose to do so, if payment in those sites were not so constrained. Radiologists might engage in ambulatory work, and anesthesiologists might choose to work in ambulatory surgery centers. In addition to affecting quality of care, the change in sites might reduce access to these physicians for hospitalized patients.

Physicians might try to transfer patients to other hospitals, especially if the physician and hospital were paid one rate. This would be especially evident if the patient had multiple, expensive conditions. Paying for all inpatient care by DRGs or other methods places the hospital and physician in a situation with the same incentive plan for underuse of services.

Costs and Efficiency

Research based on claims data suggests that, given the wide range of physician payments for medical and surgical DRGs, the vast majority (82 percent) of Medicare beneficiaries would experience a change (increase or decrease) in their total cost-sharing of $75 or less (321), assuming mandatory assignment. For 1.6 percent of beneficiaries, there would be an average increase in cost-sharing liability of more than $150. Under a physician DRG system, patients might exercise less constraint in their requests for additional services as cost-sharing would be known in advance (469). The cost-sharing liability would be higher than at present for less complicated cases and lower for more complicated ones. In a sense, less costly cases would be sudsidizing the more costly ones.

If surgical cases were more highly paid (as they are under Medicare's prospective payment system), some patients might have surgery earlier than in the past before certain medical procedures are tried. This change might negatively affect the quality of patient care if a medical treatment might have been successful.

A Pennsylvania study of per case payment for physicians' inpatient services found that total hospital outlays were reduced in many hospitals. But total physicians' payments increased because physicians were reimbursed 100 percent of a negotiated schedule of fees instead of the 90th percentile of usual, customary, and reasonable charges (286). Physician participation in the program was voluntary, and not all physicians who originally volunteered for the program completed it. By reducing hospital lengths of stay, a number of the participating hospitals reduced combined total expenditures despite the increase in physician expenditures. The Pennsylvania study had a number of methodological problems that prevent generalizing the results. Since physicians volunteered to be in the program, there may have been selection bias. In addition, the sample was small as very few analyses from the control and experimental groups were usable.

As has been mentioned with other packages, there is no guarantee that payment for inpatient episodes of care would save money for the Medicare program, although expenditures per case might be more predictable. To the extent that physicians chose to readmit patients, program expenditures might rise. Physicians might also shift services to another setting. Shifting services from one setting to another would depend on the ability to substitute ambulatory or nursing home care for inpatient care. Research indicates that such substitution is possible (101,206). The effect of shifting services on program expenditures would depend on the cost of care in other settings and the extent of care used.

Efficiency of resource use would be encouraged within a package but not necessarily across packages. Multiple admissions might increase if physicians sought to maintain or increase income. Physicians might attempt to provide more packages of care or to see only less costly patients.

For a particular case, a physician might either profit or lose financially relative to the present system.[22] Because a physician would be likely to treat small numbers of cases within each DRG (2 to 2.5 patients on average), there is little opportunity for gains and losses to cancel each other out at the DRG level (320). Even at the medical staff level, payments to physicians under DRGs would be lower where the medical staff is highly specialized (320,321). Because medical subspecialists and generalists charge less on average than surgical specialists, their relative loss of funds would be greater than that of the surgical specialists. In fact, the DRG payment could be a lottery with large losses for some physicians and windfall gains for others (313).

In the four States that Mitchell, et al., studied, the standards of care varied (320,321). For example, for lens procedures, New Jersey's care was far more service-intensive than in the other three States. Physicians in New Jersey used an assistant surgeon in three-quarters of the operations, while those in Michigan and Washington did so only 28 and 36 percent of the time, respectively, and North Carolina physicians never used an assistant surgeon who billed Medicare. Physicians in New Jersey also kept their patients in the hospital far longer than physicians in the other three States. Because of interstate variations, creating payment rates acceptable to all physicians would be difficult. Specialty differences in terms of charges were not great within New Jersey, but were significantly different within North Carolina and Washington. Specialty, however, accounted for little of the variation in treatment costs (320,321). Similar variations in treatment patterns, including hospitalization, have been noted by other researchers (125,568).

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[22] Ginsburg and Newhouse have suggested that a blended fee-for-service/DRG payment might be appropriate to alleviate some of the problems associated with the potential for certain physicians to gain or lose a great deal. The process would begin by examining each DRG to determine how homogeneous physician charges are within the DRG. Physicians would bill their regular charge, which would be screened by the CPR method and the DRG rate. The payment would be a weighted average of the CPR approved rate and the DRG rate. Since each bill would need to be screened the system would be more expensive than a DRG-only rate. With this blended method, incentives for cost containment would not be so great as with a simple DRG payment system, but incentives for underutilization would also be reduced (167).

In one instance, the prospective ratesetting system for hospitals in New York State, pressures to contain hospital costs under a prospective payment system contributed to reduced payment for hospital-based physicians. Including hospital-based physicians in the hospital DRG payment would provide similar incentives for hospitals to pay these physicians less (429). In fact, a 1983 survey by the American College of Radiology found that 80 percent of radiologists were on fee-for-service, compared with a previous finding of 63 percent in 1979 (9)

Technological Change

DRGs would encourage the development of cost-saving procedural technologies to save physician time. For example, physicians would have an incentive to develop surgical techniques that reduced operative time, such as an improved method of performing a coronary artery bypass graft or a hip replacement.

Whether an inpatient-episode package would encourage or discourage the use of ESWL would depend on whether ESWL was classified in a medical (generally, it is now treated as a medical procedure) or surgical DRG or in another classification. If ESWL were incorporated in the same package with a surgical treatment, use of the procedure that used less costly physician resources would be encouraged.

Total-Episode-of-Care Package

A total episode of care may be defined as beginning either when the patient formally requests an appointment for medical care (224) or when the patient has a face-to-face contact with a physician (224,250). Since making an appointment does not guarantee that a patient will actually follow through on medical care, the first face-to-face contact may serve as a better marker. For payment purposes, an episode would end when the last care for a particular illness was given.

Payment for a total episode of care has the potential for generating more consistent and appropriate incentives for efficiency than the current payment system (399). With the total episode approach, the provider would be given a fixed payment for an episode or a health problem. The recipient of payment could be held accountable for only those aspects of care that were physician-administered, or the facility cost could also be included.

Classification systems for total episodes of care have yet to be defined. Some investigators have defined fixed-interval episodes for purposes other than payment, such as tracking utilization (179), and other investigators have combined inpatient and ambulatory claims to form an episode of illness (249). Episodes of acute disease may be easier to define than episodes of chronic care, because acute episodes have more definite beginnings and endings. Therefore, as mentioned in the discussion of ambulatory episode of care, payment for chronic care might have to be defined according to a period of time. Payment for a total episode of care would encourage efficient use of resources across the entire array of diagnoses and treatments for that episode. Criteria would have to be established to define minimal times between contacts for the same problem in order to divide separate episodes (222).

It has been estimated that an episode classification system could be developed, tested, and refined so as to be usable for payment purposes in 5 years (222). Defining total episodes would be complicated by the fact that principal diagnosis is much more exact in the hospital setting than in ambulatory care.

The effects of a total-episode-of-care package on quality of care, access to care, costs and efficiency, technological change, and administrative feasibility are summarized below.

Quality of Care

As has been discussed with other packages, incentives to underuse consultants and ancillaries would exist under payment for a total episode. To the extent that these services add to the quality of care, problems might arise.

Access to Care

Access to care might or might not be of concern. As long as comorbid conditions were included in separate episodes, it is unlikely that there would be access problems. Still, the oldest beneficiaries might be at risk for underprovision or denial of care because they are most likely to have multiple chronic diseases and to require expensive treatment. Classification systems that adjusted well for case-mix and severity would make physicians neutral about treating different patients. Otherwise, physicians might avoid more expensive patients.

Beneficiaries would have incentives to increase visits because their cost-sharing liability would not change. As with other packages, physicians would have an incentive to reduce visits as they would be paid no more for additional visits.

Costs and Efficiency

Costs to the beneficiary might be more controlled within an episode than under the current CPR system. Both the beneficiary and the program would know their costs per episode in advance.

As long as all care was packaged in some form, Medicare program costs might be controlled. Whether program costs would fall would depend on the extent of out-of-episode care allowed.

Payment to physicians for a total episode of care would encourage efficient use of resources across the entire array of diagnoses and treatments for that episode. Some inefficiency might occur across episodes. Physicians would have an incentive to increase the number of episodes by billing for different episodes of care, and Medicare would have an incentive to define episodes broadly so that more was included within episodes.

Technological Change

With payment for total episodes of care, innovation and research and development would be more likely to be directed toward cost-saving technologies in both the inpatient and ambulatory settings. This situation might produce a problem for expensive new technologies that increased quality or that might be cost saving in the long run.

Because incentives would exist to control costs within packages, adoption of new, untried technologies with unproven efficacy would be retarded. In situations where MRI could be substituted for X-ray computed tomography (CT) scanning, for instance, physicians might choose not to use MRI.

The adoption of new lenses for cataract surgery would be encouraged if they were inexpensive, but discouraged if they were expensive even if costs would drop over time.

Administrative Feasibility

Overall, packaging might be simpler to administer than the current CPR system. Beneficiaries, the Medicare program, carriers, and physicians would probably have fewer forms to complete because of the reduced number of bills submitted. However, if procedure codes were collapsed at the carrier level and physicians could continue to bill as they do now, the number of forms submitted would be identical to the present system. Because claims volume might be smaller with packaged payment, there would be some potential saving for the Medicare program (319). Initially, some of the savings would be cancelled out by the expense of creating packages. Over time, expense would also be involved in updating packages and creating new ones. If only a portion of care were paid on a packaged basis, carriers might need to implement additional monitoring procedures to screen for services included in a package.

Implementation of most packages would involve major changes for the recipients of payments. First, the recipient (the coordinating physician, physician group, or medical staff) would have to negotiate with the physicians involved to determine how to allocate payment for physician services within the package. This negotiation might be done each time a service is performed or for a time interval. In many cases, negotiating with others would be a new and potentially bothersome responsibility. In addition, administrative responsibilities would increase for the recipient of payment. Once allocation decisions were made, the recipient of payment would need to monitor the provision of care and to determine which services were and were not included in the package.

Although establishing codes for visits or episodes might be difficult, once the codes were established, claims processing would be simplified as certain ancillaries would be included in the bills. Physicians would still be likely to document within their own records actual tests performed for liability and clinical reasons.

Carriers would be faced with additional burdens in administering an episode-of-care approach. Theoretically, physicians would be able to streamline their administrative procedures in order to submit one bill including all services associated with one episode of inpatient or ambulatory care. In practice, it might be that the episode determination would be made at the carrier level, which might delay the actual payment to the physician. This would be especially true with the more complex forms of paying physicians, such as a total episode of care. In particular, carriers would need to screen bills to make sure that services within one episode were paid as part of that episode.

Should assignment be optional, some administrative confusion would result for beneficiaries who would not know who was being paid in what manner for what services and what cost-sharing they would bear. Packaging incentives might then not apply. Effective methods of communicating with beneficiaries would need to be developed.

Monitoring for underuse of services within packages and overuse of services outside of packages would be necessary. Inpatient utilization review systems currently in place are more developed and easier to administer than ambulatory systems. Although Medicare requires utilization review for office-based physicians' services, the implementation of reviews varies among carriers (474). Given the lack of experience in evaluating utilization in ambulatory settings, systems might need to be refined or new ones developed. Once developed, the systems might be expensive to administer.

CONCLUSION

There has been little or no experience with payment for the majority of packages of services. Payment under collapsed procedure codes could be based on CPT-4 codes, but for most packages, the categories for payment have not yet been defined. In some cases, such as total-episode-of-care packages, rudimentary research would need to be conducted to develop payment categories. In other cases, such as ambulatory-visit packages, research to develop categories is currently being conducted. Some packages, such as those for inpatient episodes of care, might require demonstrations to evaluate the effects on Medicare program and beneficiaries' costs and on quality of care and access. Collapsed procedures codes could be implemented fairly quickly after decisions were made about which codes to collapse. Special-procedure packages could be implemented within a shorter time than other packages if the current coding system was used to create packages, but it would be necessary to define the package content and to delineate the tasks that the coordinating physician would have to perform.

Payment for most packages would entail major changes in financial risk for the payment recipient, whether it was a coordinating physician, a physician group, or the medical staff of a facility. The recipient of payment would have to negotiate prices and availability for referral physicians, clinical laboratories, regionalized facilities, and other referred services. An effective means of addressing the financial risk, such as an outlier policy or a reinsurance scheme, could assist with some of the financial risks that the recipient of payment would bear.

Mandatory assignment would be necessary in order for the recipient of payment to bear the financial risk of packaging's fixed payment. In the absence of mandatory assignment, the Medicare program and the beneficiaries would continue to bear the financial risk. Furthermore, without mandatory assignment, selection bias would occur. Physicians would be likely to accept assignment only for less complex and less expensive cases and to bill beneficiaries with more expensive care for amounts in excess of Medicare's payment.

Chapter 7

Capitation Payment

. . . the point remains that rationing is inevitable for all resources in all societies. The issue is simply that of how: through what institutional framework?

Robert G. Evans, Journal of Health, Politics, and Law

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Chapter 7

Capitation Payment

INTRODUCTION

Policymakers' interest in capitation payment has grown continually over the past decade as pressures to control health expenditures have mounted and as experience with health maintenance organizations (HMOs), which are paid by capitation, has become more widespread. In prepaid group practices, a kind of HMO, total expenditures 10 to 40 percent lower than in solo fee-for-service practices have been documented, primarily because of lower hospitalization rates (279,285). Furthermore, studies have found quality of care in these HMOs equal to or better than that provided by other practices (97,279). Since relatively few Medicare beneficiaries (4.2 percent in December 1985 (533)) or Medicaid eligibles have historically been enrolled in HMOs, the question arises of whether the Medicare program could constrain its expenditures by adopting capitation payment for all beneficiaries.

Beneficiaries now have the option of having Medicare pay for their medical care by capitation. Provisions of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) (Public Law 97-248) enable Medicare to pay risk-sharing plans on a capitation basis without subsequent adjustment. The act in effect set up a voluntary voucher system whereby Medicare may pay a predetermined amount to enroll beneficiaries in plans of their choice (148).

This chapter considers the expansion of capitation payment to a mandatory voucher system for all Medicare beneficiaries. The chapter first describes the concept of capitation payment and variations possible within the Medicare program. A brief historical review then documents Medicare's experience with capitation payment, including present payment for HMO contracts and demonstration projects. Because of the importance of the capitation rate, which is the price that Medicare would pay plans for beneficiaries' care, research on capitation rates is discussed in a separate section. Medicare could make capitation payments to risk-sharing plans or to fiscal intermediaries responsible for a geographic area. An analysis follows of the likely implications of different forms of capitation payment across the dimensions and medical technologies introduced in chapter 3. The chapter concludes with findings regarding the dimensions and variations of capitation payment.

THE CONCEPT OF CAPITATION PAYMENT AND POSSIBLE VARIATIONS

Capitation payment is a yearly or monthly amount per person that is fixed in advance and independent of the medical services used. Capitation arrangements may vary according to the recipient of the capitation payment and scope of services covered in the payment (table 7-1). How the rate is set may also vary, a matter discussed in a subsequent section of this chapter.

This chapter examines capitation payment for all beneficiaries to two different kinds of fiscal intermediaries: risk-sharing health plans, such as HMOs, which would assume the financial risk of arranging for or providing care to their enrollees; and geographic intermediaries, which would assume the financial risk for the care of all the beneficiaries in a geographic area. Although there are historical examples of capitation payments directly to individual physicians, recent experience under Medicare and Medicaid and in the private sector has centered on payments to fiscal intermediaries, and Medicare capitation payment to individual physicians is not considered here.

For payment to both kinds of fiscal intermediaries, Medicare would pay for beneficiaries' care

Table 7-1.—Alternatives for Capitation Payment

Recipient of payment	Scope of services: Ambulatory services (physician and ancillary)	Ambulatory services and physician inpatient services	Ambulatory services and physician and facility inpatient services
Physician			
Health plan		X	X
Geographic fiscal intermediary		X	X

X = Alternative considered in this report.

SOURCE: Office of Technology Assessment, 1985.

by capitation, but the fiscal intermediary could pay physicians and other providers by other methods, including fee-for-service, salary, or capitation. Both recipients of capitation would receive payments from the Medicare program and arrange for medical care to beneficiaries. But geographic capitation could add another level between Medicare and providers (see figure 7-1) (70,564). The intermediary-at-risk would negotiate arrangements with area providers and might sponsor its own HMO or preferred provider organization (PPO). The Health Care Financing Administration (HCFA) could continue to contract directly with HMOs and competitive medical plans (CMPs) not sponsored by the geographic intermediary.

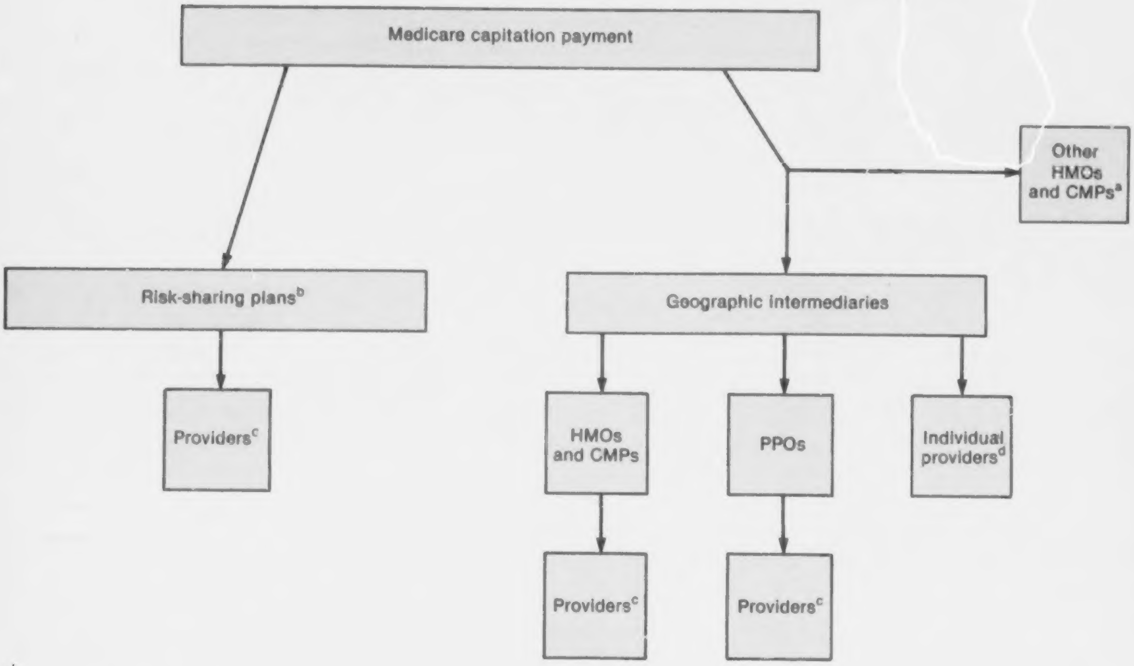
Through vouchers or some other mechanism, beneficiaries could choose among alternative arrangements under both kinds of Medicare capitation payment. In both cases, continuation of present Medicare coverage and cost-sharing provisions and of care through physicians paid fee-for-service would remain an option for beneficiaries.

This chapter examines two variations in the scope of services included in the capitation payment: ambulatory services (physician and ancillary) and inpatient physician services; and ambulatory services, plus physician and facility inpatient services. The first variation approximates coverage of Medicare Part B services and has been used in some Medicare plans (health care prepayment plans) for beneficiaries who have coverage for Part B but not Part A. The second variation, which is similar to coverage for Parts A and B, is the scope of services that has been included in most Medicare contracts and demonstration projects and by most prepaid group practices and other HMOs. The chapter does not examine two other variations in the scope of services. Some Medicaid programs, such as New Jersey's, are making capitation payments for ambulatory services alone, including ambulatory physician and ancillary services but excluding inpatient physician and hospital services (197,558a). The chapter also does not consider the variation in scope of services that adds social services and long-term care to routine acute- and chronic-care coverage and that is being used in Medicare demonstrations of social HMOs. Since long-term care lies outside the scope of this report, social HMOs will not be considered further.

This chapter thus considers the four variations in capitation payment indicated in table 7-1: payment to risk-sharing health plans for all physician and ambulatory services, payment to risk-sharing health plans for all ambulatory and inpatient services, payment to geographic intermediaries for all physician and ambulatory services, and payment to geographic intermediaries for all ambulatory and inpatient services.

The concept of capitation payment has three important elements. First, the enrollee, or Medicare beneficiary, is the unit of payment. The way a recipient of capitation payment gains more revenue is by enrolling additional people into the plan. In addition, the entity knows at the start of the coverage period the number of people for whom it is responsible and can plan the facilities and personnel needed to provide care. Unlike providers who are paid fees after they provide services or insurers who pay claims for services used, an entity paid by capitation is obligated to provide or arrange for covered care during the applicable time period.

Figure 7-1.—Medicare Capitation Payment to Different Fiscal Intermediaries



[a] Medicare could continue to contract directly with HMOs and other CMPs not sponsored by geographic intermediaries.
[b] Risk-sharing plans could include HMOs, other CMPs, or plans sponsored by insurers that offered present coverage, cost-sharing, and fee-for-service payment to providers.
[c] Physicians and other providers could be paid by different methods, such as fee for service, capitation, or salary.
[d] This arrangement would allow beneficiaries to continue present coverage, cost sharing, and fee-for-service payment to providers.

SOURCE: Office of Technology Assessment, 1985.

Second, the amount paid does not depend on the services used. Although some HMO patients may have to pay minimal amounts when they use services, such as $5 for an office visit, these charges enable plans to have lower premiums and do not generate substantial revenue. Since cost-sharing when services are used is so low, enrollees face little financial deterrent to seeking care. In actual experience, people who have faced lower cost-sharing at the time of use have been more likely to have a physician visit (343), and members of prepaid groups have been more likely than other insured people to have at least one physician visit during the year (279).

On the other hand, a provider that receives a fixed capitation payment set in advance and receives little extra revenue from additional services has no financial incentive to provide them. Within the scope of services covered by capitation, the provider has a financial incentive to use the number and mix of medical services to care for a patient's condition most efficiently and to produce each service with the greatest technical efficiency. In fact, to the extent that the provision of services adds to cost and not to revenue, that is, to the extent that the provider is at financial risk, the provider on a fixed budget also has a financial incentive against providing additional services. A countervailing incentive is that the failure of the plan to give enrolled beneficiaries desired services may lead to loss of enrollees and gross revenue.

The third important element is that the payment rate is set in advance of the time period during which it is to apply. As noted above, this prospective aspect implies that the entity paid by capitation has a defined population for which it is responsible for providing care and a fixed budget within which to provide that care. Within the period of time that the rate applies, the provider cannot influence the revenue received for a person's care.

Although this chapter takes the perspective of Medicare, which would pay a capitation payment to a fiscal intermediary, the intermediary may distribute that revenue to individual physicians on bases other than capitation. How the intermediary pays physicians and other medical professionals determines where the financial incentives of capitation payment fall. Individual physicians who are paid by capitation or share in a risk pool for referrals of ancillary or specialist services have a financial incentive to use judiciously and even underuse the services for which they are at financial risk. Physicians paid fees for services have an incentive to provide additional services providing the extra revenue exceeds the extra cost. Salaried payment to physicians promotes neither underuse nor overuse of services, but by itself does not provide incentives for physicians to use their time productively. In 1978, groups paid mainly by capitation distributed 67 percent of their incomes to physician owners by salary. Perhaps to compensate for the financial incentives of salaried payment, 53 percent of prepaid groups, compared with only 16 percent of fee-for-service groups, had explicit productivity guidelines (205).

MEDICARE EXPERIENCE WITH CAPITATION PAYMENT

Although the Medicare program in December 1985 had contracts with close to 200 prepayment plans that had enrolled almost 1.3 million beneficiaries, its experience with *prospective* capitation payments has been much more limited (see table 7-2). Until the January 1985 regulations implementing TEFRA, almost all of Medicare's contracts reimbursed prepayment plans on the basis of their costs, under arrangements similar to cost-based reimbursement of hospitals (see app. C). In June 1984, before changes in plans' status as a result of TEFRA, 44 "health care prepayment plans" had cost contracts for Part B services and 62 plans had "cost contracts" for services in Parts A and B (50 FR 1341). These two types of cost-based contracts covered 77 percent of the beneficiaries then in prepayment plans. TEFRA stipulated that after January 1, 1986, payment to cost-based plans would be limited to the average adjusted per capita cost (AAPCC) of different categories of Medicare enrollees (42 CFR 417.532), as defined below.

Table 7-2.—Participation of Prepayment Plans in the Medicare Program, 1984-85[a]

	Number of plans		Medicare enrollment (thousands)	
Type of contract	1984	1985	1984	1985
Cost contracts:	108	87	675	774
Health care prepayment plans and group practice prepayment plans[b]	44	35	575	637
Cost contract[c]	62	52	100	137
Risk-sharing contracts:	27	104	200	498[d]
Pre-TEFRA risk-sharing contract	1	4	30	43
Demonstration	26	10	170	14
TEFRA risk contracts	NA	90	NA	441
Total	133	191	875	1,272[e]

NA = Not applicable.

[a] June 1, 1984 and Dec. 13, 1985.

[b] Health care prepayment plans and group practice prepayment plans cover Part B services.

[c] Plans in this category cover services in Parts A and B. Total for December 1985 includes 56,971 enrollees in TEFRA cost plans.

[d] This figure represented 2.0 percent of all Medicare beneficiaries.

[e] This total represented 4.2 percent of all Medicare beneficiaries.

SOURCES: U.S. Department of Health and Human Services, Health Care Financing Administration, Division of Group Health Plan Operations, Baltimore, MD, personal communication, Dec. 13, 1985; 50 FR 1314-1418.

By June 1984 only one plan, Group Health Cooperative of Puget Sound, had elected the risk-sharing option made available to plans by the Social Security Amendments of 1972 (Public Law 92-603).[1] In light of the disadvantages of this option for HMOs and other prepayment plans, it is not surprising that interest was low. Although a risk-sharing HMO received a capitation payment for beneficiaries, Medicare's actual payment was still determined retrospectively, based on a comparison of the plan's costs for its Medicare enrollees and Medicare expenditures for comparable beneficiaries in the service area. Moreover, a plan was limited in the surplus that it could retain, but had to absorb all losses (see app. C).

TEFRA and the regulations effective February 1, 1985 (50 FR 1341), broadened the definition of plans that are eligible for Medicare contracts and enabled Medicare to pay plans on a capitation basis without retrospective adjustment.[2] In addition to plans that are considered qualified HMOs under the Public Health Service Act, Medicare may now contract with CMPs. Although the requirements for enrollment in their private lines of business are more restrictive for qualified HMOs than for CMPs, both CMPs and HMOs face the same requirements for Medicare enrollees. Both kinds of plans must provide Medicare covered services[3] to enrollees for a fixed prospective payment that does not depend on the frequency, extent, or kind of service actually provided. In both cases beneficiaries' premiums and cost-sharing are limited to the actuarial equivalent amounts that enrollees would have paid for Medicare-covered services if they had not enrolled in the plan. CMPs and HMOs also face the same requirements for their Medicare business regarding such matters as open enrollment, enrollment literature, and grievance and hearing procedures.[4]

Under TEFRA provisions for risk contracts, Medicare pays for each Medicare enrollee in a plan a monthly payment that is based on the estimated average per capita cost of providing care to beneficiaries in that geographic area who are not in prepayment plans. The actual capitation payment is to be 95 percent of the AAPCC, that is, the average per capita cost adjusted for age, sex, disability, and, if available and appropriate, welfare and institutional status and other relevant factors (42 CFR 417.588, 50 FR 1369). Before the contract period, the CMP or qualified HMO must compute its adjusted community rate (ACR), the rate equal to the premium that the plan would have charged non-Medicare enrollees for Medicare covered services adjusted for utilization characteristics of the plan's Medicare enrollees and reduced by the value of Medicare coinsurance and deductibles (42 CFR 417.594, 50 FR 1369). If the plan's ACR is less than the average of the Medicare capitation payments to be made to the plan (which it usually is (533)), the plan is required to provide Medicare enrollees additional benefits, to reduce premiums or other charges to Medicare enrollees, to contribute to a benefit stabilization fund,[5] or to request a reduction in its monthly capitation payment from Medicare (42 CFR 417.442, 50 FR 1354). HCFA pays each plan based on the rates for the rate cells each enrollees occupies and adjusts the plan's capitation payment if actual Medicare enrollment differs from the estimates (42 CFR 417.598).

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[1] International Medical Centers, Inc., in Miami, FL, had a risk contract with Medicare prior to entering a demonstration project in 1982 (539). By Aug. 1, 1985, three additional plans had pre-TEFRA risk-sharing contracts: Community Health Care Center Plan in New Haven, Connecticut; Total Health Care in Missouri; and Prime Health in Missouri (533). An advantage in converting to a risk contract before TEFRA regulations were promulgated was that the regulations specify that a plan with a risk contract must enroll two new Medicare beneficiaries for every one for whom payment is converted from a reasonable cost to a risk basis (42 CFR 417.432).

[2] TEFRA eliminated the previous risk-sharing option but retained the reasonable cost option.

[3] The plan must provide Parts A and B or only Part B services, depending on an enrollee's Medicare coverage.

[4] A major difference between CMPs and federally qualified HMOs is that such HMOs must charge community rates, that is, their rates must be equivalent for similar individuals or families (42 CFR 110.105). In addition, employers with 25 or more employees must offer a federally qualified HMO, but not a CMP, as a health benefit option. CMPs, on the other hand, may experience rate, that is, they may base the premiums for an enrollment group on the experience of that group. Unlike qualified HMOs, CMPs for their commercial enrollees have no restrictions on the copayments and deductibles that they may charge; have no requirement to cover mental health care, substance abuse, or home health care; and have no requirement to offer enrollment to a population broadly representative of people in the service area. CMPs need not be a separate legal entity; they may be a line of business (533).

[5] The plan may request that HCFA withhold part of its monthly per capita payment in a benefit stabilization fund to prevent excessive fluctuation in the cost of additional benefits in subsequent contract periods. Contributions to the fund may not exceed 15 percent of the difference between the ACR and the payment rate.

TEFRA's risk-sharing provisions are considered more favorable to prepayment plans than previous risk arrangements. Although capitation payments to TEFRA plans are based on 95 percent instead of 100 percent of the AAPCC, the rate is set prospectively and does not depend on the costs incurred by the plan's enrollees. A plan can count on that revenue, subject to variations in enrollment, and set its budget accordingly. TEFRA plans may realize the same profit rate on its Medicare enrollees as on its commercial enrollees, without limits on the profit that the plan may earn. Given the restrictions noted above on the relationship between the ACR and 95 percent of the AAPCC, TEFRA permits risk-sharing plans to retain any surpluses, rather than having to share them with the Medicare program. Although TEFRA plans, like previous plans at risk, must absorb all losses, TEFRA plans may obtain reinsurance or share risk with providers (42 CFR 417.407).

At the same time, financial benefits may flow to the Medicare program and to beneficiaries because of the TEFRA provisions that link capitation payments and enrollee benefits to conditions in the local marketplace. A plan's ACR, which depends on premiums charged for the plans's commercial business and hence must be competitive with other health insurance, acts as a ceiling for Medicare payments that may be retained for the plan's own use and as a threshhold for increasing benefits to Medicare enrollees or reducing payments from Medicare. Although the law gives HMOs and CMPs several options for dealing with the difference, they generally return the difference to the beneficiary by reducing premiums or adding benefits (533).

From June 1984 to December 1985, Medicare enrollment in risk-sharing plans more than doubled from 200,000 to 498,000 beneficiaries (see table 7-2). In addition to 32 plans that converted from demonstrations, by December 1985 58 other plans had negotiated TEFRA risk contracts and 78 applications were pending (533). In addition, 4 plans have pre-TEFRA risk-sharing contracts (533).

Despite the rapid and continuing increase in TEFRA risk contracts, it is apparent that Medicare's experience with prospective capitation payment has been limited mainly to 32 demonstration projects and 1 pre-TEFRA risk contract (see box 7-A). In 1980, eight HMOs in five market areas began enrolling Medicare beneficiaries in "capitation" demonstrations that involved prospective capitation payments (411). The seven plans that continued on a capitation basis had 51,327 Medicare enrollees as of January 1985. Under subsequent "competition" demonstrations, 21 plans (including 1 in the capitation demonstrations) in 12 market areas were awarded contracts and were operational by mid-1984 (411). By the end of March 1985, 13 plans remained in the demonstration projects (see table 7-3). The enrollment of almost half a million Medicare beneficiaries in risk-sharing plans by December 1985 indicates that such plans are capable of marketing to and enrolling this group.

HCFA has contracted with Mathematica Policy Research to evaluate the competition demonstrations (59). The project is examining determinants of beneficiaries' choice of plan; effects of enrollment on the use, quality, and cost of care; competition among providers in a market area; and the effects on the fee-for-service sector of prospective capitation payments by Medicare to risk-sharing plans (539). Although the evaluation is not scheduled for completion until the end of 1987, preliminary results will be available in the interim.

Previous studies have examined the experience of Medicare beneficiaries in seven prepaid group practices paid on a cost-reimbursement basis and in four plans paid under risk-sharing arrangements. These studies suggest that prepaid groups can deliver care to Medicare enrollees at lower cost than the care provided to other beneficiaries in an area, but the studies of risk-sharing plans raise questions about the extent to which plan beneficiaries have been representative of other area beneficiaries in the same payment categories.

In the first set of studies of prepaid groups, Medicare payments to "group practice prepayment plans" (later health care prepayment plans, as described above) were based on their costs and covered only Part B services within the plan. Medicare paid separately for enrollees' use of Part B

Box 7-A.—International Medical Centers, Inc. (IMC), Miami, FL

IMC is a for-profit HMO that provides health services to enrollees through a combination of salaried physicians who practice in its own clinics and affiliated medical groups operating as a network. Its service area covers the Miami and Palm Beach area on the East coast of Florida and a three-county area around Tampa Bay.

The physicians on the staff of IMC-owned clinics are salaried employees of IMC whose financial incentives are not formally tied to their utilization of services. Their individual productivity and utilization rates are monitored, however, and affect their continued employment by IMC. Outside specialists to whom patients are referred by the staff physicians in the clinics are paid by IMC according to a standard fee schedule.

All the affiliated provider groups in the network receive capitation payment for their professional services. IMC withholds 15 percent of the capitation payment for administration and marketing expenses. For Medicare enrollees, the payment arrangements are somewhat different. IMC immediately transfers the entire payment for Part B services to the affiliated groups, but retains the Part A payment in a hospitalization risk pool for the group and splits any excess or surplus equally with the group. The affiliated provider groups distribute the capitation payments to their constituent physicians at their own discretion, using a wide variety of arrangements including fee-for-service, salary, and capitation, with and without utilization incentives. The affiliated providers are responsible for making their own payment arrangements, subject to IMC approval, for all specialist services that they themselves cannot provide. But since the payment that the affiliated provider groups receive from IMC is intended to cover all professional services, these groups must bear the risk for the use and cost of those services.

Under a variety of contractual arrangements ranging from negotiated charges to per diem payments, hospital costs are paid by the plan to several area hospitals. However, most admissions are directed to a hospital that is a subsidiary of the holding company that owns but is administratively separate from IMC. In addition, IMC self-insures for all adverse utilization experiences, i.e., it bears all risk for catastrophic costs, without stop-loss or reinsurance.

Utilization control begins with the assignment of a personal physician to each member as a primary-care case-manager who must approve all services and specialist referrals. All hospital admissions require pre-authorization from a physician panel, which is staffed 24 hours a day. A nurse-staffed utilization review team provides concurrent review, assigning an anticipated length of stay to each inpatient and monitoring the patient's progress. The team also reviews the daily reports of an automated management information system on the use of services by all hospital patients, sorted by patient, by provider group or clinic, and by individual primary-care physician. Affiliated provider goups are responsible for their own utilization review procedures outside of the hospital, and the IMC staff physicians are subject to monitoring for productivity, use of laboratory services, drugs, and referrals.

A quality assurance committee meets monthly to evaluate a sample of medical records, to evaluate services and programs, and to prepare a report to the administrator. A separate physician peer review committee reviews individual physicians by examining a random sample of their patient records and by conducting complete reviews of any providers who may be suspected of substandard care. An additional quality assurance team consisting of a nurse practitioner, a physician, and a health administrator was begun in response to the rapid growth of the plan. The team visits each medical center and affiliated provider every 3 or 4 months to conduct an audit.

IMC is heavily dependent on Medicare for its enrollment, with some 40,000 out of a total of 75,000 members being Medicare enrollees as of early 1984. Before entering the Medicare competition demonstration in August 1982, IMC had 12,000 Medicare enrollees under a Section 1876 (of the Social Security Act) Medicare risk contract. Its rapid expansion has been met by expanded utilization review and quality assurance programs, as well as the management information systems mentioned previously. However, allegations of deficiencies in the services provided to Medicare beneficiaries led to an investigation by the General Accounting Office of IMC and the other HMOs in the south Florida demonstration project. Most of the problems seemed to have been caused by Medicare beneficiaries not understanding the requirement of HMO enrollment that they seek care only from plan doctors and by difficulties in maintaining records on enrollment and disenrollment of Medicare beneficiaries in HMOs (476).

SOURCE: Drawn from A. Brewster, K. Langwell, P. McMenamin, et al., *Evaluation of the Medicare Competition Demonstrations: Preliminary Implementation Case Studies of Four South Florida AHPs* (Washington, DC: Mathematica Policy Research, Inc., April 1984).

Table 7-3.—Capitation Payment for Medicare Beneficiaries in Demonstration Projects, as of Mar. 31, 1985[a]

Plan	Unit of payment to physicians	Unit of payment to hospitals	Government-plan risk-sharing	Plan-provider risk-sharing	Beneficiary cost-sharing
IMC, Inc. Miami, FL	Staff-salary, network-capitation	Per diem and discounted charges	Plan bears all[b]	Groups bear risk for referrals	None
AV-MED Miami, FL	IPA-capitation	Per diem and discounted charges	Plan bears all[b]	10% withheld for bonus fund	Nominal copayments
C.A.C. Health Plan Miami, FL	Staff-salary and bonus[c]	Negotiated[d]	Plan bears all[c]	None	None
HealthCare of Broward Plantation, FL	Staff-salary and bonus	Charges[e]	Plan shares with parent corporation	None	Premium and drug copayment
Group Health Plan of Southeast Michigan Troy, MI	Staff-salary, referrals-some capitated	Negotiated[e]	Plan bears all[b]	None for staff; capitated specialists for professional services only	Premium; copayment for drugs and mental health
Metropolitan Health Council of Indianapolis Indianapolis, IN	Staff-salary, referrals—<5% of contracting specialists on capitation	Per diem	Plan bears all[b]	None for staff; capitated specialists risk costs of professional services only, plan splits hospital savings with hospital	Premium and drug copayment
Medical East Community Health Plan Braintree, MA	Staff-salary, referrals on capitation	Per diem (State rate-setting)	Plan bears all[b]	None for staff, capitated specialists' professional services only	Premium and drug copayment
Genesee Valley Group Health Association Rochester, NY	Group-members paid salary and bonus[c]	Per diem (State rate-setting)	Plan bears all[b]	None tied to utilization	Premium and nominal copayments for visits
Genesee Health Plus Flint, MI	IPA receives capitation for physician services, 12% withheld for excess utilization fund; individual physicians paid capitation or FFS	Charges paid by HMO. IPA shares no risk for inpatient hospital services	Plan shares risk in AMCRA risk pool[f]	IPA bears risk for professional services and ancillaries; hospital surplus shared with IPA; individual providers not at risk	Premium and nominal copayments
Family Health Program, Inc. Long Beach, CA	Staff-salary and bonus[g]	Discounted[e]	Plan bears all[b]	None	Premium for high option only
Delmarva Health Care Plan Easton, MD	IPA-capitated case managers; referrals at FFS charges	Unspecified	Plan shares in AMCRA risk pool[f]	Case managers at risk for maximum $1,000 services per patient, including hospital charges	Premiums and copayments

Table 7-3.—Capitation Payment for Medicare Beneficiaries in Demonstration Projects, as of Mar. 31, 1985[a]—Continued

Plan	Unit of payment to physicians	Unit of payment to hospitals	Government-plan risk-sharing	Plan-provider risk-sharing	Beneficiary cost-sharing
Health Options of South Florida Miami, FL	HMO pays IPA, which pays case managers capitation, minus withhold to fund hospitalization and referrals; referred specialists paid FFS	Per diem	Plan shares in AMCRA risk pool[f]	Case managers at risk for withhold in referral and hospital fund, pooling risk among case managers	Premium and nominal copayment
Central Massachusetts Health Care, Inc. Worcester, MA	IPA pays members UCR, minus 20% from ambulatory services and 25% from hospital services to fund risk pool	Unspecified	Plan shares in AMCRA risk pool[f]	20% of ambulatory fees and 25% of hospital fees at risk	Premium and nominal copayments

[a] Beginning Apr. 1, 1985, these plans converted to TEFRA risk contracts. Conversion was completed by June 30, 1985. Payment to plans covered all ambulatory and inpatient services covered under parts A and B of Medicare, except that payment was limited to Part B services for beneficiaries who were eligible only for Part B. Plans may have covered additional services not covered by Medicare. An additional 7 plans were included in earlier Medicare Capitation Demonstrations.

[b] Reinsurance limits catastrophic losses.

[c] Not linked to utilization.

[d] No discounts cited.

[e] Method of payment unspecified.

[f] AMCRA (American Medical Care and Review Association) sponsored a risk-sharing pool for its member health plans participating in Medicare demonstrations.

[g] Performance related, possibly to utilization rates.

SOURCE: A. Brewster, K. Langwell, P. McMenamin, et al., "Evaluation of the Medicare Competition Demonstrations: Preliminary Implementation Case Studies of Four South Florida AHPs," Mathematica Policy Research, Inc., Washington, DC, Apr. 30, 1984; J.P. Hadley, Office of Demonstrations and Evaluation, Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, personal communication, Dec. 30, 1985; P. Doyle and K. Langwell, "National Evaluation of Medicare Competition: Preliminary Implementation Case Study of Genesee Health Care," Mathematica Policy Research, Inc., Washington, DC, Jan. 28, 1985; I. Lubitz and S. Nelson, "Evaluation of the Medicare Competition Demonstrations: Preliminary Implementation Case Study of Genesee Valley Group Health Association," Mathematica Policy Research, Inc., Washington, DC, August 1984; K. Langwell, "National Evaluation of Medicare Competition Demonstrations: Preliminary Implementation Case Study of Delmarva Health Care Plan," Mathematica Policy Research, Inc., Washington, DC, Jan. 28, 1985; K. Langwell, "National Evaluation of Medicare Competition Demonstrations: Preliminary Implementation Case Study of Family Health Program, Inc., Long Beach, CA," Mathematica Policy Research, Inc., Washington, DC, Jan. 28, 1985; S. Nelson, "National Evaluation of Medicare Competition Demonstrations: Preliminary Implementation Case Study of Central Massachusetts Health Care, Inc.," Mathematica Policy Research, Inc., Washington, DC, March 1985; S. Nelson, "National Evaluation of Medicare Competition Demonstrations: Preliminary Implementation Case Study of South Florida Group Health, Inc.," Mathematica Policy Research, Inc., Washington, DC, May 1985; L.F. Rossiter and K. Byrd, "National Medicare Competition Evaluation: Implementation Case Study Report for: Group Health Plan of Southeast Michigan," Medical College of Virginia, Richmond, VA, September 1984; L.F. Rossiter and K. Byrd, "National Medicare Competition Evaluation: Implementation Case Study Report for: Metropolitan Health Council of Indianapolis, Inc.," Medical College of Virginia, Richmond, VA, Aug. 31, 1984; L.F. Rossiter and G.C. Wood, "National Medicare Competition Evaluation: Implementation Case Study Report for: Medical East Community Health Plan, Braintree, Massachusetts," Medical College of Virginia, Richmond, VA, February 1985.

services outside the plan and for Part A services. Thus, the experience with these plans does not relate to the incentives of prospective capitation payment. Nevertheless, for five of the seven plans, Medicare expenditures including in- and out-of-plan care were lower for plan enrollees than for control groups (91,566). Unlike the two other plans, these five owned or controlled their own hospitals and operated outside of New York City. In all instances, Medicare expenditures per enrollee were higher for physician and related services but lower for inpatient services and, with one exception, for hospital outpatient services (91).

Conflicting hypotheses have been advanced to predict utilization and medical expenditures for people who enroll in HMOs (279). According to one theory, people who feel at higher risk of expensive care are more likely to join HMOs for the comprehensive coverage and financial protection offered. The greater coverage of HMOs may also attract people who favor preventive care and are likely to seek care when illness occurs. Other explanations would predict that HMO enrollees may be predisposed to use less expensive care than average either because they prefer not to use medical care or because enrollees are less likely to have ties to an existing provider, an indication that they were in good health. Studies of non-Medicare enrollees have indicated the importance of an existing physician relationship, but have found conflicting results concerning indicators of prior health status.

The second set of Medicare studies examined the prior use and cost of beneficiaries who joined four risk-sharing plans during the mid to late 1970s (120,121). Enrollees in a plan with a pre-TEFRA risk-sharing contract had inpatient use and expenditures about 50 percent lower than a comparison group (120). Two out of three plans studied from the Medicare capitation demonstrations also had indications of nonrandom selection, since their enrollees had previously had 20 percent lower Medicare reimbursements than comparison groups (121). A greater degree of biased selection by low-risk people into HMOs was found in four Medicare demonstration projects in which HMOs were permitted to screen the health of applicants before offering high- or low-option coverage (278).

The results of these studies and of others indicating biased selection by low-risk non-Medicare enrollees into HMOs may not be generalizable (32,278). First, all cases of lower risk enrollment concerned prepaid group practices. Higher risk people may be attracted to the individual practice association type of HMO since they can maintain previous relationships with physicians. Second, with one exception, only one fee-for-service alternative was offered. A study of Federal employees' enrollment in health plans found lower users gravitated not to HMOs but to low-premium, high-cost-sharing, fee-for-service plans (433). Third, with one exception, the studies reported on cases where an HMO option was being offered for the first time. Furthermore, countervailing information for people under age 65 suggests, for example, that although enrollees of prepaid group practices in the West were younger than those in competing plans, prepaid group practice enrollees in most age-sex and diagnostic categories had greater need for hospital care (47).

Enrollment in HMOs of beneficiaries likely to have medical expenses much below average could occur because of the preferences of enrollees or the marketing techniques of the plan. Holding an open enrollment period, during which beneficiaries choose among options and plans must accept people on a first-come first-enrolled basis, has been suggested as a partial means of avoiding biased selection (129). In some of the instances cited above, however, apparently nonrandom selection resulted from an open enrollment process. It should be noted that Enthoven also called for community rather than experience rating, limitations on switching plans, and minimum benefit coverage.

As part of the Medicare capitation demonstrations, beneficiaries in the Minneapolis-St. Paul area had the choice of enrolling in one of four HMOs or of retaining traditional fee-for-service arrangements. In 1982, a comparison of HMO enrollees and nonenrollees found that beneficiaries who had joined an HMO during the early part of the demonstration tended to have had less private health insurance than nonenrollees and were more dissatisfied with their usual source of care, especially in the areas of cost and paperwork (155). The beneficiaries who chose HMOs characterized themselves as healthier than those who remained with fee-for-service arrangements. HMO enrollees were more socially active and less likely than nonenrollees to report having a serious medical condition associated with a greater likelihood of high medical cost. This finding may have been related to the fact that until 1984, HCFA permitted the four HMOs to screen beneficiaries' health before enrollment in a high-option plan.

The issue of biased enrollment is of great importance to the Medicare program. Whether there is a selection bias will affect whether Medicare gains or loses from greater enrollment in risk-sharing plans. Medicare will gain if it pays plans 95 percent of the AAPCC for enrollees who would have incurred greater expenses outside of the plan, but Medicare will lose if it pays plans 95 percent of the AAPCC for beneficiaries whose expenses would have been far below that amount outside of the plan.

ESTABLISHING THE CAPITATION RATE

It is in the interest of the Medicare program, its beneficiaries, and society as a whole to pay for medical care in such a way that plans have financial incentives to work with providers to deliver care efficiently. If great differences exist in the profit that can be made from enrolling low-risk vs. high-risk beneficiaries, plans will find it in their interest to stress marketing strategies rather than efficient delivery of care. Competing through marketing techniques to enroll low-risk people and to avoid high risks would be consistent with the expertise of health insurance companies, which may sponsor risk-sharing plans.

Because of the substantial variation in medical expenses among Medicare beneficiaries, risk-sharing plans could face great losses. In 1977, Medicare paid $4,000 or more per patient for only about 5 percent of its beneficiaries, but the expenses of these beneficiaries accounted for 52 percent of Medicare's total expenditures (182). Medicare paid more than $20,000 per patient for only 0.09 percent of all beneficiaries, and these payments totaled 2.8 percent of program expenditures. A risk-sharing plan with a random group of beneficiaries could thus be hurt financially if even a small number of these expensive cases enrolled in excess of the predicted average. The risk would be greater for smaller plans because they would be subject to relatively more random fluctuation. An HMO with 1,000 enrollees could experience a 5 percent or greater cost increase from the enrollment of three beneficiaries instead of the expected one in the category over $20,000. Such a plan would probably bear an even greater risk because HMOs, unlike Medicare, typically provide catastrophic coverage.

At the same time, a risk-sharing plan has the potential to reap sizable gains. In 1977, Medicare incurred no expenses for about 36 percent of its beneficiaries (182).[6] In addition to people who used no services during the year, these beneficiaries included people who did not reach the deductible and people who did not bother to submit claims. However, most of the variance in Medicare expenditures (about 92 percent) was associated with differences among people who incurred costs, especially with whether or not people had hospital costs (about 38 percent of the total variance).

A risk-sharing plan uncertain whether or not Medicare's payment will cover the expenses of enrollees may attempt to enroll lower risk beneficiaries. A greater degree of favorable selection will be required to cushion a plan against such uncertainty the smaller the plan's enrollment, the less uncertainty the plan's management is willing to bear, the lower the savings that the plan expects from more efficient delivery of care, and the less the difference between the AAPCC and Medicare's payment (182). On the other hand, by reducing hospitalization rates, HMOs may realize greater net revenues (revenue from AAPCC payments minus expenses of care) from high-risk enrollees who are especially likely to use hospital care under fee-for-service arrangements. It should also be noted that the regulations implementing TEFRA prohibit plans from using health screening or discriminatory marketing practices.

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[6] In 1982, Medicare incurred no expenses for 31 percent of elderly beneficiaries and 45 percent of disabled beneficiaries (525).

Private health insurance has not developed means to adjust rates for different risk groups that are applicable to Medicare (461). Only about 15 percent of all individual applications for medical insurance are rejected because of adverse medical histories, are offered policies that exclude certain medical conditions, or are insured for an excess premium that reflects such high-risk factors as health status and occupational hazards. Because companies have rejected the worst risks or have restricted their coverage, the experience of the private sector provides little basis for calculating rates according to risk category.

On the other hand, the insurance industry's experience with coverage for affinity groups may be transferable to the Medicare population. Insurers have provided coverage for employers who wished to furnish health insurance to their elderly workers. More importantly, insurance companies have sold policies to beneficiaries to supplement their Medicare coverage. A related development is coverage of long-term care as an insurance product.

A desirable approach to establish Medicare capitation rates would contain incentives for plans to deliver cost-effective care and attract plans to participate, while allowing Medicare to reap some of the savings from more efficient delivery of care. The approach would also discourage manipulation by plans, including selection of low risks, and would require minimal additional data and expense to implement and administer.

Alternative Methods of Refining the Average Adjusted Per Capita Cost (AAPCC)

In 1983, an actuarial firm advising HCFA concluded that the AAPCC method was the best then available for determining Medicare payment to risk-sharing plans (311). However, the AAPCC explains very little of the variation in Medicare expenditures for its elderly beneficiaries (32). Applied to 1979 expenditures per beneficiary, for example, age, sex, and welfare status explained only 0.6 percent of the variation.[7] Research is underway to refine the AAPCC to incorporate factors that would identify low- and high-risk beneficiaries, namely prior use of medical care (19,32), functional limitations and disability from chronic illness (181,456), or demographic and socioeconomic characteristics (48).

One model used as prior use variables the hospital days used in the previous 2 years, whether or not the enrollee was hospitalized in the previous year, and whether or not the Medicare Part B deductible was met in the previous 2 years (32). Although this model was superior to the current AAPCC and to whether or not a person was hospitalized in the previous year, the hospital days-Part B model explained only 4.3 percent of the variance in Medicare expenditures per beneficiary.

The prediction for groups of enrollees is the important result because Medicare would pay risk-sharing plans for groups of beneficiaries. As one would expect, the predictions for groups were more accurate.[8] The hospital days-Part B model was again superior to the others. For groups of beneficiaries biased by prior use, age, or welfare status, the ratio of the predicted reimbursement for the biased group to the actual reimbursement for the population from which the biased group was selected differed no more than 5 percent. This model is being used in a demonstration project in Minneapolis, in which an HMO is trying to attract frail elderly beneficiaries (see table 7-4) (278). The main shortcoming of this refinement is that it does not distinguish high users who had self-limiting acute conditions from those with chronic conditions that will continue over time (183,278). If an HMO would enroll fewer (more) chronically ill people among its high users, Medicare would be likely to have greater losses (gains).

Another refinement of the AAPCC related to prior use would add information about diagno-

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[7] The proxy for welfare status was whether or not States had purchased Medicare Part B coverage for beneficiaries who were also eligible for Medicaid. Institutional status, although used in the AAPCC formula, was excluded because it is available only from special surveys.

[8] The random errors of predictions for individuals tend to cancel out for large groups (278).

Table 7-4.—Medicare Demonstrations of Capitation Payment, December 1985

Prior Use Modification of AAPCC. Senior Health Plan, Minneapolis, MN	Medicare Payment at 85 Percent of AAPCC. Finlay Health Plan, Miami, FL
General Description: For all Medicare enrollees who have been in the program at least 2 years, i.e., those 67 or older, data from the Health Insurance Master File on prior hospital days used and whether they met the Medicare deductible, rather than institutional category, are used along with age, sex, and Medicaid status to produce an individually adjusted Average Adjusted Per Capita Cost (AAPCC). Medicare's capitation payment to the plan is 95 percent of the adjusted AAPCC. Medicare pays for enrollees without 2 years of utilization experience in the Master File at 95 percent of the standard AAPCC, adjusted for age, sex, Medicaid, and institutional status.	*General Description:* Medicare pays plan a capitation payment of 85 percent of the AAPCC, instead of 95 percent as mandated by regulations implementing the provisions of Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) (Public Law 97-248). In return, the plan can keep any surplus revenues from the capitation payment, rather than having to report an Adjusted Community Rate and make adjustments required by TEFRA regulations.
Scope of Services: Medicare Parts A and B, with no limit on days of use for inpatient and nursing facility services. Plan makes arrangements for some community-based social services, but not to the same extent as a Social/Health Maintenance Organization.	*Scope of Services:* Medicare Parts A and B, with no day limits on hospital care and additional coverage for routine medical care, prescription drugs, routine dental care, eyeglasses.
Payment to Physicians: Network model. Plan pays a capitation payment for both physician and hospital services to 6 riskpools made up of both physicians and hospitals. Each pool uses different arrangements to share risks and pay providers.	*Payment to Physicians:* Network model. Capitation payments are made to plan-owned clinics with staff physicians and also to contracting affiliated providers (including both group practices and solo practitioners). For Medicare enrollees, the plan makes one capitation payment to cover ambulatory service, and a separate payment to cover inpatient, home health, skilled nursing facility, and hospital-based outpatient care. For the latter payment, risk is shared between the plan and the providers, with 75 percent of any surpluses or deficits accruing to the plan and the remainder to the contracting unit.
Payment to Hospitals: In all cases the plan puts both the hospital and primary care physicians acting as gatekeepers at risk for some portion of their services. The level of risk borne and the payment rate are negotiated between the plan and representatives of the risk pool. Physician referrals are paid according to arrangements made by each risk pool. However, the plan withholds a negotiated portion of the pool's capitation payment to fund referals.	*Payment to Hospitals:* Negotiated per diem contracts.
Risk-Sharing With HCFA: None. Plan may arrange independently for stop-loss insurance.	*Beneficiary Cost-Sharing:* None. No additional premium in addition to Part B premium and no deductible or copayment liability.
Beneficiary Cost-Sharing: Premium is $21.75, in addition to standard Part B premium. Beneficiary is not liable for copayments or deductible.	*Risk-Sharing With HCFA:* None. Plan may arrange independently for stop-loss insurance.

SOURCES: R. Deacon, Office of Demonstrations and Evaluation, Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, personal communication, Dec. 4, 1985; J. Laly, Senior Health Plan, Minneapolis, MN, personal communication, Dec. 5, 1985; J. Robinson, Finlay Health Plan, Miami, FL, personal communication, Dec. 4, 1985; and R. Sirmon, Office of Demonstrations and Evaluation, Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, personal communication, Dec. 2, 1985.

ses associated with hospitalization and indicative of chronic conditions likely to result in substantial future medical costs (183,278). Including diagnosis has raised the explanatory power of the model to 9 percent of the variance (183). The University Health Policy Consortium based at Brandeis University further classified hospitalizations and found that repeated hospitalizations for cardiac conditions, cancer, or musculoskeletal conditions were associated with subsequent expenditures about 3.5 times the average (278). Research is proceeding to predict expenses after enrollment in an HMO and to focus on conditions with large unavoidable expenditures that are not discretionary and hence manipulable by the risk-sharing plan. It is also important that the approach used does not penalize risk-sharing plans for keeping use and costs of care low.

Other Methods of Determining Capitation Payment

Besides refining the capitation rate, the AAPCC, to deal with the risk to be borne by plans and possible biased selection by enrollees, Medicare could change its risk-sharing arrangements with plans. Such approaches would incorporate some retrospective adjustments to the prospective payment depending on actual cost of treating beneficiaries (183).

These approaches would have Medicare share in the risk of high-cost enrollees and would thereby reduce the risk of losses for the HMO from severely ill enrollees. In exchange for Medicare's sharing the risk, the HMO would receive a lower percentage of the AAPCC. In effect, Medicare would be providing reinsurance to the HMO, and Medicare and the HMO would share the profits from greater efficiency. HMOs would be more willing to enroll all beneficiaries. For example, Medicare could pay an HMO well below the AAPCC and in addition pay 80 percent of an individual's care over $5,000 (individual stop-loss reinsurance). Or Medicare could pay a plan 85 percent of the AAPCC and absorb any losses over 3 percent of their total capitation revenue (aggregate stop-loss reinsurance). Both approaches would reduce but not eliminate the financial incentives for the plans to be efficient (183).

Alternatively, risk-sharing plans could rely on private reinsurance, which is permitted under the regulations implementing TEFRA, to protect them against losses. Under this approach, Medicare would transfer all the risk to the plan, which would then pay an insurer to help bear the risk. Any savings that Medicare might then share in the form of lower capitation payments would stem from any efficiencies in delivering medical care that were achieved by the plans.

Capitation rates could also be determined by competitive bidding. This approach would be more compatible with capitation payment to a fiscal intermediary than to numerous risk-sharing plans. Competitive bidding to select an intermediary would entail disadvantages similar to those enumerated in chapter 5, such as the possibility of unintentionally setting up an organization that would develop monopoly power.

IMPLICATIONS OF MEDICARE CAPITATION ALTERNATIVES

A substantial body of literature stretching over 25 years pertains to experience with providers paid by prospective capitation payments. Most of the studies concern large, established, nonprofit prepaid group practices, and some of the groups, such as Group Health Cooperative of Puget Sound and many of the Kaiser-Permanente Medical Care Programs (see box 7-B), owned their own hospitals.

It is difficult to extrapolate the results of these studies to other plans, both present and future. Although group practices in June 1984 still accounted for 59 percent of all HMOs and 81 percent of total enrollment, their number had stayed almost constant over the previous year, while individual practice associations (IPAs) had grown 27 percent in number of plans and 56 percent in total enrollment (240). More than half of all enrollees were in plans with 100,000 or more members, but by far the greatest growth in enrollment was occurring among plans of 50,000 to 99,999 members (240). Newer plans are also more likely than older ones to be investor owned (for profit) (121) and to have arrangements that place physicians at financial risk (see box 7-C). Even before the TEFRA regulations, Medicare enrollment in HMOs was increasing more rapidly than general enrollment (212). From June 1983 to June 1984 Medicare enrollment in HMOs increased 36 percent.

In addition to HMOs that have expanded their operations to different States, insurers and hospital management companies have entered the HMO market in substantial numbers (see table 7-5). Not only is the relative number of IPAs increasing, but, according to anecdotal information, their sponsorship is as well. Early IPAs were preexisting foundations for medical care or were established by medical societies. By contrast, newer IPAs may be outgrowths of fee-for-service group practices or HMOs that wish to grow rapidly. Individual physicians feeling competitive pressure may join an IPA to increase their patient load, and the group practice or HMO may find "direct contract IPAs" a desirable way to expand without great capital investment in facilities.

All of these plans will be operating in a market environment much different from the past. As

Box 7-B.—Payment to Physicians in the Northern California Kaiser Permanente Medical Care Program*

The Kaiser Permanente Medical Care Program, Northern California Region, is a prepaid group practice type of HMO. It is made up of three cooperating independent organizations. The Kaiser Foundation Health Plan contracts with individual and group subscribers to provide comprehensive health care benefits to enrollees. The Health Plan in turn contracts with the Kaiser Foundation Hospitals to provide hospital services and with the Permanente Medical Group to provide physician services for enrollees. As of December 1984, the Medical Care Program had 1.9 million members, of whom about 112,000 were Medicare beneficiaries.

At the beginning of the program in the early 1940s, all physicians were employees of a sole proprietorship (what would today be called a staff model HMO) and were paid a monthly salary in accordance with a schedule accounting for level of administrative responsibility, tenure, professional skills, and the going market rate for new physicians. The program found early that in order to retain physicians, total annual income had to satisfy individual physicians' expectations and meet the prevailing market price. By providing income parity with physicians outside the program, the plan has kept termination rates for partners (or shareholders) for other than normal retirement or long-term disability at about 1 percent per year. Only once (in 1970) when annual incomes dropped below that of the competition did the termination rate reach 3.7 percent.

In 1948, the Permanente Medical Group was spun off from the Kaiser Foundation Health Plans and Kaiser Foundation Hospitals as an independent group practice partnership. Each year the physician partnership negotiated with the Health Plan a prospective capitation payment per enrollee for the delivery of physician services for the coming year. In addition, the Health Plan reimbursed the group for fixed expenses, such as office rental and equipment.

Under the partnership arrangement, after 3 years of salaried employment by the medical group, new physicians became eligible to become partners. In order to raise working capital, each physician made a modest financial contribution to the partnership, which was returned to the physician if he or she left the partnership. Physician partners received a fixed annual income and a share in an incentive compensation plan that was linked to the financial success of the program as a whole. The incentive compensation arrangement among the Health Plan, Hospitals, and Medical Group was initiated in the late 1950s and has continued with some modifications.

Through incentive compensation arrangements, the partners shared in both favorable and adverse financial results and were directly involved in the financial success of the total program. In the Health Plan's projected dues rate for the year, a targeted amount was included for a contingent incentive payment. The contingent contractual payment from the Plan to the Medical Group was an additional amount agreed on in advance that became an additional level of earnings for Medical Group partners to be distributed equally among them. It was contingent because even though a mutually agreed on target figure was included in the financial forecast, the actual amount was dependent on the overall results of operations for the year, and thus was not precisely predictable. The incentive payment was not considered to be a "surplus" or an "excess" of earnings, but a planned feature of the Medical Group's physician compensation program.

In the 1970s, to minimize fluctuations in income, a "corridor concept" was agreed on that set for the physician partners a target incentive payment, with adjustments applied for the year to decrease the additional income if over the target, or to supplement the income deficiency if under the target. Although the incentive compensation was never substantial (averaging less than 5 percent of a physician's total income), it recognized that the performance of an individual physician influenced the effectiveness and economy of the total program—Kaiser Foundation Hospitals and Health Plan as well as the Permanente Medical Group.

In 1982, the Permanente Medical Group became incorporated. All partners at the time of incorporation were designated "senior physicians." A senior physician's initial contribution to the partnership was converted to shares in the corporation providing voting rights and eligibility to receive dividends. Currently, payments to Permanente Medical Group physicians are divided into four portions: "distributed earnings," which constitute the basic fixed monthly income of senior physicians;

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*Excerpted from M. Collen, "Payments to Physicians in the Permanente Medical Group," prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, August 1985.

"undistributed income," which is placed "at-risk" in case of excess plan expenditures and is paid to the physicians on a quarterly basis; any excess of revenue over a sum targeted for distributed earnings and undistributed income, which is analogous to the "incentive compensation" of the former partnership and is divided equally between the Medical Group and Kaiser Foundation Hospitals in accordance with the earlier "corridor concept"; and a dividend, which is declared and distributed at the end of each fiscal year.

The Permanente Medical Group, Inc., in 1984 had more than 2,000 physicians and provided care to almost 2 million Health Plan members. The average ratio of full-time equivalent physicians to Health Plan members has steadily decreased over the past 40 years, from 1/1,200 from 1944 to 1948 to 1/955 in 1974 and 1/890 in 1984. In its early years, as a small organization, the quality of professional care was the direct responsibility of the chiefs of the professional services. As the organization grew in size, it gradually added the usual programs and procedures for assuring quality of care. Utilization committees study usage patterns and "profiles" of tests ordered, and these patterns are compared by departments and facilities to suggest when significant differences could be due to differences in patient characteristics or physician practice styles. The Medical Group's quality assurance program is directed by a regional director with a committee comprised of physicians in every medical center who are responsible for carrying out all procedures needed to satisfy accreditation requirements.

before, HMOs will be competing for enrollees and physicians with fee-for-service arrangements, but the entire medical care sector is under much greater pressure to reduce the costs of performing services and to constrain total expenditures (see ch. 2). How plan managers, private third-party payers, physicians, and lay people will respond is, of course, unpredictable. But the rapid and substantial changes in market context and configuration of plans dictate caution in formulating policy on the basis of past results.

This section analyzes the implications of different Medicare capitation arrangements for the dimensions outlined in chapter 3: quality of care, access to care, cost and efficiency, technological change, and administrative feasibility. In the course of the discussion, the implications are noted for five medical technologies: pneumococcal vaccination, clinical laboratory services, magnetic resonance imaging (MRI), extracorporeal shock wave lithotripsy (ESWL), and cataract surgery. The section is divided into two parts according to the recipient of Medicare payment: the first concerns capitation payment to plans, such as HMOs, that in turn would arrange for physicians and perhaps other providers to deliver medical care to enrollees; and the other examines capitation to fiscal intermediaries, such as Medicare carriers, that would arrange for plans and providers to deliver care. In either case the scope of services covered by the capitation payment could vary from physician and ambulatory services to those services plus inpatient care. The discussion throughout highlights potential problems that would warrant attention as Medicare policy is designed and implemented.

Capitation Payment to Health Plans

Under this approach, Medicare would pay to the plan chosen by a beneficiary a capitation payment for care to be provided during a given time period. Although it is beyond the scope of this project to examine the mechanics of beneficiary choice, this alternative is consistent with Enthoven's Consumer Choice proposal regarding plans that would provide comprehensive care (129) and with the Reagan Administration's proposals that beneficiaries be given vouchers and select plans (104). Indemnity insurers as well as HMOs and CMPs could receive capitation payments. HCFA might require that all plans meet a minimum benefit requirement and certify their financial viability. It is assumed that one of the beneficiaries' options would be to continue present coverage and present arrangements with physicians. For example, a private insurance company might offer such coverage and accept the capitation payment as the premium.

Box 7-C.—MD-IPA Health Plan, Rockville, MD

MD-IPA is a for-profit, federally qualified individual practice association HMO. The plan pays primary care physicians a monthly capitation payment. The plan is divided into two independent corporations: an association of physicians (Physicians' Health Plan of Maryland) providing the professional services of physicians and noninstitutional ancillaries, such as laboratory and X-ray services, and the administrative arm (MD-IPA), which provides administrative and marketing services, such as enrollment, premium collection, and financial planning, and contracting for institutional, pharmacy, and dental services. This dual structure, which was originally a requirement for Federal qualification as an HMO, has been retained by the plan even though this provision of the Health Maintenance Organization Act (Public Law 93-222) has since been amended. MD-IPA operates in the Washington, DC, metropolitan area, covering the District of Columbia and portions of Maryland and northern Virginia.

The administrative arm contracts with the physicians' association to provide physicians' and other services to members of the health plan in return for a capitation payment. The physicians' association then distributes a monthly capitation payment to each primary care physician (defined as a family practitioner, internist, pediatrician, or obstetrician/gynecologist). The primary care physician acts as a case manager for her or his panel of patients. The monthly capitation payment covers the costs of professional services rendered by that physician to each enrollee on that physician's panel, whether those services are delivered in a hospital or in an ambulatory setting, and the costs of all office ancillary services. The payment is adjusted for the age and sex of each patient in the panel, and 20 percent of each payment is withheld by the physicians' association for a risk-sharing/incentive fund.

The capitation rate for primary care physicians was originally determined through an actuarial study of "reasonable gross incomes" by specialty, divided by productivity measures, such as visits per physician. Actual fees were not used in this initial calculation. The capitation rate has been adjusted over the operational years of the plan by comparing this actuarial rate with the actual fees that the physician would have charged for the services rendered. The annual adjustment of the capitation rate has resulted in the primary care physicians' getting paid about what they would have been paid if they had billed charges (333).

A second age- and sex-adjusted capitation payment for referral and ancillary services is made by the physicians' association into a credit account administered by the primary care physician. Charges for referrals to specialist and ancillary services are debited against the individual accounts of the primary care physician who ordered them. The specialists in the physicians' association are paid from the account on a fee-for-service basis according to a predetermined maximum fee schedule. So that the specialists also share in the financial risk, 15 percent of the scheduled rate is withheld from their fees and placed in the risk-sharing/incentive fund.

If expenditures for the referrals of a primary care physician exceed the amount in the referral and ancillary services account, there is no penalty for that physician. The cost of the excess is paid out of the risk-sharing/incentive fund, which is financed from the 20 percent withheld from the primary care capitation payment and the 15 percent withheld from specialist fees. However, if at the end of a 6-month period there are surpluses in the primary care physician's referral and ancillary services account, the excess is given to that physician, up to certain limits. Thus, the incentive is a positive one against excess expenditures; there is no negative sanction if a deficit does occur. At the end of the calendar year, after all expenses are paid, the Board of Directors of the Physicians' Health Plan distributes any funds remaining in the risk-sharing/incentive fund to the physician members of the IPA, both primary care and specialist, in proportion to the amount each physician paid in.

The risk to the individual primary care physician is limited further according to the size of his or her panel of patients by a graduated series of stop-loss provisions. A physician with only a few IPA enrollees among his or her patients may be liable for a maximum of $500 per patient from the ancillary and referral account. Per patient expenditures for referral and ancillary services above that amount are automatically paid from the risk-sharing/incentive fund. Those with a larger number of IPA patients may be liable to pay up to $10,000 per patient per 6-month period from their ancillary and referral account, according to the principle that a physician can spread the risk of extraordinary expenses more evenly across a larger pool of patients.

All laboratory services are provided by a single independent laboratory, which is paid a capitation fee under contract to the Physicians' Health Plan. Hospitalization costs are funded and administered separately from the costs of physicians' services by the MD-IPA administrative unit out of a budget funded from premium revenues. By contract, the health plan was to share savings or deficits in the hospitalization budget 65 percent with the physicians' association in 1984 and 55 percent in 1983. In both years actual hospitalization costs were less than the budgeted amount, and the surplus was distributed to the individual physicians.

All peer review functions are performed by the Physicians' Health Plan. A quality assurance program is being developed for the plan, although formal mechanisms are not yet in place. The most important existing formal utilization review program is preadmission authorization for hospitalization. There is also a system of ongoing current review of hospital stays. The plan relies primarily on the financial incentives of the capitation payment to encourage the primary care physician case manager to refer patients to specialists and to hospitalize only when necessary.

SOURCES: MD-IPA Health Plan, *1984 Annual Report* (Rockville, MD: MD-IPA, 1985); and G.A. Nalli, President, MD-IPA Health Plan, personal communications, May 15, 1985 and Nov. 26, 1985.

Quality of Care

From the early studies of prepaid group practices in the 1960s through the reviews of IPAs and other HMOs of the 1980s, evaluations of practices paid by capitation have found the quality of care provided to their enrollees at least as good and usually better than that of comparison groups (97,107,194,223,279,404,483,579,581). These evaluations have incorporated measures of structure, process, and outcome. The capitation practices have had higher percentages of board-certified physicians, for example; have followed standards for process of care as well as or better than fee-for-service practices; and have had comparable or better mortality and morbidity rates. Although people in capitated plans have been as satisfied with the technical aspects of care, they have been less satisfied with interpersonal aspects than those in fee-for-service practices. More recently, a 1984 survey found HMO members more likely than eligible nonmembers to be satisfied with their health care. The greatest differences concerned out-of-pocket expenses, availability of services, and waiting time for an appointment (274).

But certain incentives of capitation payment, the results of specific studies, the public sector's experience with prepaid plans, and particular problems of Medicare beneficiaries prevent automatically generalizing the above results to Medicare beneficiaries. No study has examined the quality of care provided to Medicare beneficiaries. Until recently, few Medicare beneficiaries have been enrolled in HMOs, which have marketed their plans mainly to employed populations. The National Medicare Competition Evaluation funded by HCFA includes an evaluation of the quality of care provided by risk-sharing plans (411). Although that part of the evaluation was expanded in June 1985, results are not expected until 1987 (541). In addition, an HCFA-sponsored evaluation of Medicaid demonstration projects may also provide relevant information (see table 7-6) (197).

Capitation payment provides financial incentives to care for enrollees at low cost. Since per capita revenue is fixed for the time period, the plan's net revenue or profit depends on the costs incurred in providing care. These incentives have many positive implications for quality. There is an incentive to avoid hospitalization and to treat people elsewhere, an approach that reduces exposure to nosocomial infections and to unnecessary procedures. In fact, lower hospitalization rates have been observed in prepaid groups for both medical and surgical care (279). In prepaid groups, admissions were lower for diagnosis and tests and for surgical procedures, including ones that have been associated with unnecessary care (hemorrhoidectomy, surgery for varicose veins, and hysterectomy) (279).

However, financial incentives, at least at the plan level, are to reduce cost, and that may be done at the expense of quality. The check on such

Table 7-5.—Major Sponsors of Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs), 1985[a]

	HMOs[b]					PPOs		
Sponsor	**Total**	Group	Staff	IPA	Network	**Total**	Operational	Preoperational
Insurers:								
Aetna	**3**	0	0	3	0	**7**	7	NA
Blue Cross/Blue Shield Affiliated Plans	**73**[c]	14	8	23	28	**34**[d]	34	NA
CIGNA Health Plans	**15**	2	8	5	0			
CIGNA Insurance Co.						**17**	17	NA
Equitable	**0**	0	0	0	0	**4**	2	2
Hancock/Dikewood	**4**	0	0	3	1			
John Hancock Insurance						**9**	5	4
Metropolitan	**2**	0	0	0	2	**20**	14	6
Provident Life Insurance (Health Point Corp.)	**0**	0	0	0	0	**7**	5	2
PruCare	**17**	14	0	3	0			
Prudential (PruNet)						**30**	2	28
Wausau Insurance Co.	**5**	0	0	5	0	**1**	1	NA
Hospital Management Companies:								
American Medical International	**2**	0	1	1	0	**3**	3	NA
Hospital Corp. of America	**4**	1	0	2	1	**1**	0	1
Humana, Inc.	**10**	0	0	2	8	**21**[e]	21	NA
National Medical Enterprises	**3**	0	0	3	0	**5**	5	NA
Nationwide HMO Networks:								
HealthAmerica	**36**	8	9	13	6	**0**	0	0
Kaiser Permanente	**11**	11	0	0	0	**0**	0	0
Maxicare	**13**	0	0	0	13	**0**	0	0
U.S. Health Care Systems	**3**	0	0	3	0	**0**	0	0
United Health Care Corp.	**33**	0	0	27	6	**1**	1	NA
SANUS Corp.	**4**	0	0	4	0	**1**	1	NA
Whitaker Health Services	**10**	0	0	10	0	**0**	0	0
Totals	**248**	50	26	106	65	**161**	118	43

[a] Data obtained from telephone survey, November 1985, except as noted. This list should not be considered exhaustive of sponsoring organizations.

[b] Number of HMOs owned and operated as lines of business by cited institutions. Does not include HMOs operated under management contracts.

[c] Data from Blue Cross and Blue Shield Association, June 5, 1985, and Sept. 1, 1985.

[d] Data from Blue Cross and Blue Shield Association, Oct. 1, 1985.

[e] States where Humana Care Plus programs are operational. "Humana Care Plus" plans are operated as HMOs or PPOs in different markets, with varying degrees of selective contracting and free choice of providers.

SOURCES: **Aetna data**: J. Harper, Aetna Insurance Co., Hartford, CT, personal communication, Nov. 12, 1985. **American Medical International data**: H. Leavit, American Medical International, Beverly Hills, CA, personal communication, Nov. 15, 1985. **Blue Cross data**: Blue Cross and Blue Shield Association, "Blue Cross and Blue Shield Plan Activities in HMOs, December 31, 1984," June 5, 1985, Blue Cross and Blue Shield Association, "Blue Cross and Blue Shield Plan HMOs Operational After December 31, 1984," Sept. 1, 1985, and Blue Cross and Blue Shield Association, "Blue Cross and Blue Shield Plans Marketing Preferred Provider Products," Oct. 1, 1985. **CIGNA data**: R. Maag, CIGNA Corp., Hartford, CT, personal communication, Nov. 14, 1985, and S. Shulman, CIGNA Health Plans, Dallas, TX, personal communication, Nov. 7, 1985. **Equitable data**: J. Neely, Equitable Life Assurance, New York, NY, personal communication, Nov. 20, 1985; and R. Ullman, Equitable Insurance Society, New York, NY, personal communication, Nov. 19, 1985. **John Hancock data**: R. Morse, Hancock/Dikewood Health Plans, Boston, MA, personal communication, Nov. 8, 1985; and C. Somers, John Hancock Insurance, Boston, MA, personal communication, Nov. 11, 1985. **Hospital Corp. of America data**: J. Horn, HCA Health Plans, Nashville, TN, personal communication, Nov. 15, 1385. **Health Point data**: R. Paden, Health Point Corp., Chattanooga, TN, personal communication, Nov. 21, 1985. **HealthAmerica data**: G. Nielson, HealthAmerica, Inc., Nashville, TN, personal communication, Nov. 14, 1985. **Humana data**: M. Hoover, Humana Care Plus, Louisville, KY, personal communication, Nov. 21, 1985. **Kaiser data:** Interstudy, Inc., *National HMO Census* (Excelsior, MN: Interstudy, Inc., March 1985); and M. Tatge, "HMO Enrollment Up 26.7% to 1.68 Million," *Modern Healthcare*, 15(4):138-141, June 7, 1385. **Maxicare data**: K. Wichser, Maxicare Health Plans, Hawthorne, CA, personal communication, Nov. 19, 1985. **Metropolitan data**: L. Hyman, Metropolitan Life Insurance Co., New York, NY, personal communication, Nov. 7, 1985, and T. Nimnicht, Metropolitan Life Insurance, St. Louis, MO, personal communication, Nov., 19, 1985. **National Medical Enterprise data**: S. Tyler, National Medical Enterprises, Beverly Hills, CA, personal communication, Nov. 25, 1985. **Prudential data**: T. Burke, Prudential Insurance Co., Newark, NJ, personal communication, Nov. 7, 1985. **SANUS data**: M. Rosen, Sanus Corp., New York, NY, personal communication, Nov. 15, 1985. **United Health Care data**: A. Billingstad, United Health Care Corp., Minnetonka, MN, personal communication, Nov. 21, 1985' and S. Conway, United Health Care Corp., Minnetonka, MN, personal communication, Nov. 19, 1985. **U.S. Health Care data**: D. Richman, "U.S. Health Care Aims at Growth With Push Into New York, Dallas," *Modern Healthcare* 15(20):50-53, Sept. 27, 1985. **Whitaker data**: Whitaker Health Services, Marketing Deptartment, Los Angeles, CA, personal communication, Nov. 18, 1985.

behavior is that plans would lose enrollment if members perceived that quality was below an acceptable level. Such enrollee dissatisfaction depends to some extent on lay knowledge of what constitutes appropriate care. People would be better able to judge technical care for conditions or technologies that they or their friends use frequently, but are dependent on physicians' guidance for infrequently used or new procedures (366).

Table 7-6.—Capitation Payment for Medicaid Beneficiaries in Demonstration Projects, December 1985[a]

Plan	Recipient of government capitation payment	Unit of payment to physician providers	Unit of payment to hospitals	Government-plan risk-sharing	Plan-provider risk-sharing
New Jersey Medicaid Personal Physician Plan	Physician	Capitation fund for case managers' services, referrals, and ancillaries, up to a maximum. Separate fund for hospital services	DRGs	NA	At risk for referrals, professional services, and ancillaries up to defined maximum per provider; not at risk for hospital facilities, receives 50% of savings, bonus for outpatient management of inpatient procedures
Monroe County Medicap Monroe County, NY	Medicap acts as intermediary; seeks bids from 4 competing HMOs for rights to serve Medicaid beneficiaries	HMO discretion	HMO discretion (county is exempt from State rate-setting)	HMO bids include level of risk borne; intermediary sponsors stop loss pool, which HMO can opt out of for higher capitation payment	HMO discretion
Santa Barbara County Health Initiative Santa Barbara County, CA	County Health Authority (intermediary)	Capitation account to case manager covers all patient services with 20% withheld for risk sharing	Per diem	Authority at risk [b]	20% withhold maximum risk to case managers, excesses in capitation account shared with county
Arizona Health Care Cost Containment System	Prepaid plans bid on rates to serve Medicaid clients and medically indigent	Plan discretion	Plan discretion	State stop-loss per beneficiary	Plan discretion
Missouri Managed Care Jackson, County, MO	Plans contract for services at State-set rates	Plan discretion	Plan discretion	Contracting plan bears all[b]	Plan discretion
Minnesota Prepaid Medicaid Competition Demonstration	Plans contract for services at State-set rates	Plan discretion	Plan discretion	For Supplemental Security Income beneficiaries, government pays between 95% and 100% of AAPCC[b]	Plan discretion

NA = Not applicable

[a] Plans may have arrangements for beneficiary cost-sharing

[b] Reinsurance may limit catastrophic losses.

SOURCE: R. Deacon, Office of Demonstrations and Evaluation, Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, personal communication, Dec. 20, 1985; P.L. Haynes, *Evaluating State Medicaid Reforms* (Washington, DC: American Enterprise Institute, 1985); J. Meyer, American Enterprise Institute, Washington, DC, personal communication, Oct. 10, 1985; S. Treiger, Office of Demonstration and Evaluation, Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, personal communicaton, Nov. 25, 1985; and J. Vertrees, La Jolla Management Corp., Rockville, MD, personal communication, Jan. 3, 1986.

As discussed above, the incentives of individual physicians depend on how they are paid by the plan. If physicians continue to be paid fees for their services, financial incentives continue to reward the provision of additional services. Physicians in prepaid groups usually derive part of their income from profit-sharing or "productivity" measures, that is, their use of services and number of patients. The percentage of such income may be quite small; at Kaiser-Permanente in northern California, for example, the incentive compensation payment, which depends on the results of overall operations for the year, has not exceeded 5 percent of the average physician-partner's income (87). However, in spite of the specific arrangements for compensating physicians, physicians have a personal financial stake in the continued solvency of the organization.

Management practices may also be relevant to physician behavior in this regard. Kaiser-Permanente physicians retain the same responsibility for seeing a full load of ambulatory clinic patients regardless of the number of their patients who are hospitalized (223). All other things being equal, a physician in this circumstance would be more likely to prescribe return visits in the office than to hospitalize the patient and increase demands on the physician's time.

Hornbrook and Berki have theorized that HMOs would not be expected to skimp on treatment of severe illness, such as colorectal cancer, for which definitive treatment is available (223). HMO physicians are subject to the same community standards of practice as fee-for-service physicians and may face greater malpractice liability exposure since corporations are more likely than individual physicians to be sued. HMOs may also excel in reassuring worried-well patients that their symptoms are self limiting or part of the aging process. But people who are subtly sick, that is, whose conditions cannot readily be identified, may experience delays in the diagnosis of potentially serious disease if HMO physicians face bureaucratic complexities in ordering diagnostic workups or in obtaining tests from outside the HMO. Of course, to the extent that enrollees are dissatisfied and believe that they would receive more prompt care under different arrangements, they can leave that plan and join another.

Results of a study in Washington State of patients with colorectal cancer are consistent with the hypothesis concerning delay in diagnosis, but not conclusive (150). After 4 years, no differences in outcome were found between prepaid group and fee-for-service patients, and treatment was comparable once the diagnosis was made. However, a significantly longer period elapsed in the prepaid group between initial contact with a physician and start of treatment, 47 days in the HMO and 14 days in fee-for-service practice.

It is possible, under the financial incentives of capitation payment, that delays would occur in resorting to more expensive treatment for a condition for which there were alternative therapies. For treatment of renal stones, which depending on the stone may be treated surgically or medically, there might be a preference for the initial use of a potentially cost-saving technology, such as ESWL, perhaps on an ambulatory basis. Whether or not such a delay would compromise the patient's outcome and quality would depend on the specific situation. Similarly, capitation plans would have an incentive to delay surgery such as cataract removal and to have it performed by physicians who specialize in that procedure. The likely effect on quality is not clear. Delaying surgery might constitute poorer quality care if the person was unable to function effectively in her or his daily activities. On the other hand, delays in surgery can have health benefits if the surgery, such as appendectomy, is avoided or if the diagnosis is refined.

Under capitation payment, plans would have financial incentives to take advantage of economies of scale in locating and using expensive equipment. There would be incentives to send more tests to centralized clinical laboratories, perhaps ones owned by the plan, and to perform far fewer tests in separate physicians' offices. Such a shift has the potential to improve the quality of test results. State standards may be more likely to apply to testing in central laboratories than in physician offices, and appropriately trained technicians may be more likely to perform the test. Although capitation plans have financial incentives to underuse diagnostic tests, like other services, no difference in use has been detected (279).

Although greater use of preventive services has been reported for enrollees of capitation plans, for the most part these services consisted of annual physical examinations, which have questionable efficacy (483). This greater use is consistent with lower financial barriers to initial use because patient cost-sharing has typically been lower in capitation plans (279). There are no recent studies assessing whether HMOs are providing more of other preventive services, such as health education, nutritional guidance, and counseling. HMOs may cover preventive services and feature that coverage in advertisements as a marketing tool.

Vaccinations are often cited as an example of a cost-effective preventive technology (576). Studies that have examined rates of vaccination, including influenza vaccination, among HMO enrollees have found no consistent pattern of use: the enrollees of some plans had lower rates and the enrollees of other plans had higher rates than comparison groups (483). Pneumococcal vaccine is the only preventive service that Medicare covers for all beneficiaries. Capitation plans have financial incentives to provide pneumococcal vaccine to elderly and high-risk people to the extent that they are likely to remain in the plan long enough for the plan to reap any savings from disease prevention. But pneumococcal vaccine is unlikely to save costs, and initial uncertainty about its efficacy probably deterred physicians from recommending its use (485). The low use of pneumococcal vaccine, regardless of payment arrangement, is consistent with barriers that precede payment, as discussed in chapter 3.

The financial incentives for risk-sharing plans to reduce the costs of care and perhaps to provide too few services apply only to the services covered by the payment. If the capitation payment did not cover inpatient care, the plan and perhaps its physicians, depending on their income arrangements, would have increased incentives compared to the present situation to hospitalize patients for care. Hospitalization would enable physicians to perform tests and therapeutic procedures while incurring the cost only of physician services for the plan. Even overhead expenses would be borne by the hospital. These incentives would be compatible with those of hospitals paid according to diagnosis-related groups (DRGs), because hospitals desire additional admissions and profit from low-cost cases in a given DRG. If capitation payment covered only non-inpatient services, attention to admissions from risk-sharing plans would warrant the particular attention of the quality assurance and utilization review body.

Although Medicaid programs have increasingly been adopting capitation payment, historically few Medicaid eligibles have been enrolled in HMOs. Some HMOs have served poor people effectively (194). At least at Kaiser-Permanente in Oregon the program entailed adding substantial outreach activities to the regular HMO (178).

During the early 1970s, substantial quality problems occurred in prepaid health plans set up for people eligible for California's Medicaid program (483). These problems were addressed by subsequent Federal and State legislation. Amendments to the Health Maintenance Organization Act in 1976 (Public Law 94-460) required that all plans receiving Medicaid funds be federally qualified HMOs, and California implemented more stringent regulations for certification and prohibited certain marketing and management practices.

More recently, concerns have been about the quality of care received by Medicare beneficiaries in certain demonstration projects in Florida (477). The problems identified in hearings by the House and in a report by the General Accounting Office related primarily to timely enrollment and disenrollment (476). The General Accounting Office is continuing to examine the situation, and Mathematica's evaluation of Medicare competition demonstrations will also cover the plans involved.

The Office of Health Maintenance Organizations in the Public Health Service determines whether plans meet the conditions of an HMO or CMP and are eligible to contract with HCFA (584). These arrangements have been continued under the regulations implementing TEFRA and apply to HMOs and CMPs (both cost and risk plans) (533). The Public Health Service reviews among other things that the plans have in effect quality assurance programs and are financially viable organizations.

The regulations implementing TEFRA also give utilization and quality control peer review organizations (PROs) the responsibility of reviewing the care provided by HMOs and CMPs (50 FR 1341). Although the specifics are still under discussion, the intention is to tailor review to the different financial incentives and to stress review for underprovision rather than overprovision of services (302). PROs would be able to delegate quality review to committees made up of HMO physicians.

The contract that HCFA requires for eligible plans stipulates that as part of its quality assurance program the organization agrees to comply with requirements in the regulations for PRO review of services to Medicare enrollees and to furnish the PRO pertinent data (Article IV General Conditions) (533). The organization also agrees to disclose required financial information and to comply with other reporting requirements designed to monitor continued compliance with the regulations. Prior to TEFRA, HMOs also had to have quality assurance programs and to agree to review by professional standards review organizations (PSROs) (533). In fact, review for HMOs like other practices pertained only to inpatient hospital cases (325).

The final set of concerns about quality stem from the characteristics of Medicare beneficiaries. Elderly poor people and elderly people generally have medical and social needs that differ from those of employed populations or even of Medicaid beneficiaries (194). Elderly people are more likely to have chronic illnesses and conditions such as impaired heart or lung function that complicate management of acute illness. Medicare beneficiaries are also more likely than the general population to have motor or sensory impairments that may affect their ability to cope with unfamiliar administrative arrangements, especially those of a large bureaucracy. On the other hand, once a beneficiary becomes familiar with HMO procedures, administrative matters may be more simple than under fee-for-service arrangements because the patient has less paperwork.

The evaluation of Medicare competition demonstrations will provide information on whether or not these concerns are well founded. In the meantime, they suggest the need for monitoring the experience of Medicare beneficiaries in capitation plans, especially if Medicare enrollment was expanded into new and rapidly growing plans (194). Factors to monitor would include an increase in preventable deaths, reduction in functional status because of failure to provide services such as physical therapy, and deterioration in quality of life from failure to perform expensive therapies such as coronary artery bypass surgery or artificial hip replacement. If concern lay mainly with plan rather than physician incentives to provide too few services, emphasis could be directed to the availability of resources that hinge on management decisions, such as the number of certain specialists per enrolled population or the availability of certain expensive technologies.

Access and Selection Bias

If risk-sharing plans continued the low levels of cost-sharing that have typified prepaid groups and erected no additional bureaucratic barriers to access, it is likely that Medicare beneficiaries would have improved financial access to care compared to present Medicare coverage. Enrollees of prepaid groups have been more likely than people in comparison practices to have at least one physician visit during the year (279), a result consistent with the findings of the Rand Health Insurance Study that the likelihood rises with lower cost-sharing (343). The experience has been mixed with enrollees of IPAs (279). Medicaid eligibles in prepaid groups were also found more likely than controls to initiate visits (279). No such pattern has been evident for followup visits (279), a finding consistent with physicians' rather than patients' being more likely to initiate such care.

Medicare beneficiaries' geographic access to care might be reduced, especially for specialized services. Plans paid by capitation have an incentive and the ability to match equipment, facilities, and staff to the enrolled population. An example is regionalizing facilities to take advantage of economies of scale in producing technical services. Where regionalization of services was evident in the San Francisco area of Kaiser-Permanente, some larger hospitals were fully equipped, and some smaller ones were equipped for emergency and chronic care (280). Kaiser enrollees may have had longer travel times in some cases. Reduced geographic access could pose problems for beneficiaries who have vision or mobility impairments. On the other hand, access could be improved to the extent that more facilities are available in one place.

A major concern about access stems from the possibility that plans might attempt to enroll low-risk or low-cost beneficiaries. If such preferred selection took place, beneficiaries with conditions that put them at high risk of using expensive services might have difficulty finding plans to accept them. A standard benefit package and an open enrollment period during which plans were required to enroll people in the order they applied could alleviate this problem (129). TEFRA already mandates an annual 30-day open enrollment period during which plans must accept enrollees on a first-come, first-enrolled basis. But biased selection, whether by plans or beneficiaries, may have occurred during previous open enrollment periods (278). Constructing capitation rates that would adequately reward plans for caring for beneficiaries in high-cost categories would reduce plans' preference for low-cost enrollees and might result in plans' preferring to enroll high-cost beneficiaries.

Cost and Efficiency

Prepaid group practices have achieved savings in total per capita costs (premiums plus out-of-pocket expenses) of 10 to 40 percent versus comparison plans (279). Earlier studies could not distinguish the role of differences in benefit coverage, characteristics of enrollees, payment methods, and scope of services (extent of vertical integration). However, Rand's National Health Insurance Study assigned people randomly and covered comparable benefits (285). In that study, the expenditure rate for enrollees of Group Health Cooperative, the prepaid group practice, was 25 percent lower than that for nongroup fee-for-service enrollees who received free care. There were no significant differences, however, between expenditures for the HMO enrollees and for people subject to 95 percent coinsurance for fee-for-service care. People with high cost-sharing had lower visit rates than prepaid group enrollees, but not significantly different hospitalization rates. These results suggest that prepaid group practice and high cost-sharing had similar effects on expenditures and hospital use, but that prepaid group enrollees were not so deterred from seeking care (343). As described earlier, studies have found that, compared to control groups, Medicare payments were lower for beneficiaries in five of seven prepaid groups that had cost contracts (91).

Lower costs can be achieved by producing technical services at lower cost or by using a lower cost mix of services to provide the same quality care. In general, HMOs were not found to produce services more efficiently (279), although a recent study reported that within a hospital-based clinic, HMO patients had significantly fewer visits and lower laboratory charges for hysterectomies and appendectomies and lower total charges for appendectomies, but not for cholecystectomy and hernia (23).

For the general population and for Medicare beneficiaries, savings have been attributed to lower hospital admission rates for both medical and surgical diagnoses. This phenomemon is consistent with providing a lower cost mix of services. Capitation payment contains an incentive to deliver care in the most efficient setting with the most efficient mix of technologies. Cataract removal, for example, would be likely to be performed almost exclusively in an outpatient setting, except for patients with complicating comorbid conditions. Expensive technologies with high fixed costs, such as MRI or ESWL, might be regionalized by entrepreneurs or plans in freestanding diagnostic or therapeutic centers.

As noted above, an implication of having a defined population to serve is that an organization can match facilities and staff to that population. Prepaid groups have historically had lower numbers of surgeons and hospital beds per population (483). This result, of course, may indicate not the efficient use of resources, but the enrollment of a population with lower use of those services.

Out-of-plan use has not accounted for the differences in costs between prepaid groups and other practices, and neither ambulatory physician visits nor ancillary use has been markedly lower (279). Nor have HMOs held their rate increases below those of fee-for-service practices, suggesting that any reductions are one-time savings (279,343) and that capitation plans have been able to maintain a lower level of costs over time.

Other organizational arrangements besides prepaid group practice have had low hospitalization rates (436). Two fee-for-service practices that owned their own hospitals, an ambulatory fee-for-service group, and physicians in solo practice acting as case managers have achieved low hospitalization rates comparable to those of prepaid groups. These findings suggest the importance of organization as a factor separate from payment method. Lower surgical rates but not savings in expenditures have been found for IPA enrollees compared to people insured with Blue Shield or indemnity plans (279,483). The hospitalization rates of IPAs have been much lower than those of the general population, a mean of 448 days per 1,000 enrollees compared with about 737 per 1,000 U.S. population under age 65 for 1983 to 1984[9] (240,549). These figures were not age-sex adjusted and, like other comparisons involving HMOs, it is not known whether enrollees were representative of the population. It is also not clear whether consistent definitions of hospital days were used regarding newborns, Medicare beneficiaries, and benefits coordinated with other insurers. Among types of HMOs, network models, in which an HMO contracts with two or more group practices to provide medical services, and group models have had the lowest hospitalization rates, followed by staff models and IPAs (239,240).

Since organizational formats besides prepaid group practice appear capable of achieving efficiencies, it is not clear which type of arrangement would predominate in a situation where the incentives of capitation payment pushed plans and providers to operate more efficiently. How plans paid by capitation react would depend greatly on the structure of capitation rates, which, as described in an earlier section, could reward creative marketing strategies to enroll low-cost beneficiaries or could reward efficient delivery of care.

Medicare program expenditures over time would depend on which occurred. In any case, program expenditures would be more predictable and controllable than under the current CPR system.

Beneficiaries' costs would be likely to fall if risk-sharing plans, as now, were required to share savings with beneficiaries in the form of increased benefits or reduced premiums. Beneficiaries' costs would not rise in the absence of a Federal policy decision to increase their financial liability under the program.

If Medicare's capitation rates were comparable to payments by other payers, capitation payment for beneficiaries would in itself be unlikely to affect the expenditures of other payers. If Medicare's rates were much below the market rate, plans and providers would find non-Medicare enrollees more attractive and would be expected to shift their marketing and provision of services to them. In either case, the ultimate effect on the costs of other payers would depend on the cost-saving activities undertaken by them (see app. D) and by the competitive pressure on providers engendered by such independent changes as increases in physician supply (see ch. 2).

Technological Change

Capitation payment would expand the changes in market conditions created by Medicare's prospective payment system for inpatients, so that the development of cost-saving technologies would be rewarded beyond the inpatient setting. In recent decades, the prevalence of insurance coverage increasingly provided a secure and growing market for medical technologies (487). In the context of open-ended third-party reimbursement, new technologies, especially those for acute inpatient care, were valued if they provided additional benefits, such as improved diagnosis or treatment. Potential purchasers and users of technology paid little attention to cost because their charges or costs were usually reimbursed.

The constraints of capitation payment would make providers more cost conscious about the capital and operating costs of technology. Such a change already appears to be taking place regarding inpatient care as a result of Medicare's payment by DRGs (489). Depending on Medicare's leverage from its market share, Medicare's paying for ambulatory care on a prospective basis would extend these incentives to physicians' offices, freestanding centers, and hospital outpatient departments. Since DRG payment applies to inpatient operating expenses and some method of including capital costs seems likely, market incentives would change even if the capitation payment applied only to ambulatory care and physician services.

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[9] The information on IPAs covers July 1, 1983, to June 30, 1984. Data for the U.S. population are an average of rates for calendar years 1983 and 1984.

Physicians' offices have become a more attractive target for technology development and marketing since Medicare DRG payment. Under capitation payment manufacturers would attempt to incorporate cost-saving features in the technologies for the ambulatory market as well as the hospital market. For example, physicians who continued to perform clinical laboratory tests in their offices would have greater interest in equipment to perform simple tests that was inexpensive to purchase and did not require expensive technicians to operate.

Most technology would continue to be developed for hospitals, because the most severe, complex, and expensive cases would be treated there and because hospitals would continue to account for a large portion of the medical market. The medical community would continue to value technologies that clearly improved diagnosis or therapy, even if they increased costs, especially since physician researchers are typically involved in technology development, evaluation, and initial adoption. It is also possible that hospitals would continue to compete for physicians and patients by acquiring new technologies. This phenomenon seems to be occurring even under DRG payment in northern Virginia, where the largest hospital wished to purchase an ESWL unit that the hospital hoped would serve the Washington, DC, metropolitan area (413).

Nevertheless, even within that context, the more cost-conscious environment would discourage the development and adoption of some technologies, especially expensive ones that added to the cost of care. No evidence has been found that HMOs have been less likely to *use* expensive technologies for their patients (582). But in the early phase of an expensive new technology, when appropriate use was unclear and use rates were low, at least the larger prepaid groups have sent their patients to facilities outside the plan. Kaiser-Permanente in Northern California used this strategy for X-ray computed tomography (CT) scanning and for open-heart surgery (129,480). If higher rates of use or lower technology cost later made it cheaper for the plan to provide the service inside the plan, the facilities were added to the plan. Otherwise, the plan continued to contract outside the plan for those specialized services.

Under more generalized Medicare capitation payment, one would thus expect more delay in adoption of an expensive technology such as MRI, especially while its demonstrated advantages over alternative modalities are fairly limited (234). As long as use inside the plan was low and the technology remained expensive, a plan would be likely to contract for MRI services outside the plan.

Capitation payment could greatly boost the development of managerial technologies (483). Although prepaid group practices have been able to deliver medical care at lower cost than comparison practices, the capability of other organizational arrangements has not been subjected to a market test. As noted above, there are indications that other formats, such as multispecialty fee-for-service group practice, can also achieve lower costs. And IPAs appear to be evolving in the direction of capitation payment to physicians and greater utilization controls. Greater cost constraints from capitation payment would probably stimulate the development of other arrangements and the spread of those that were successful.

Capitation Payment to Geographic Fiscal Intermediaries

Instead of paying individual plans a capitation payment, Medicare could pay fiscal intermediaries that were willing to assume financial risk for services to beneficiaries in a geographic area (70,242, 564). The capitation payment could cover only physician services and ambulatory care or could also encompass inpatient services. The intermediary or carrier in turn would negotiate arrangements with providers in the area and offer beneficiaries a choice among plans.

No such arrangement has existed under Medicare. But in response to an HCFA solicitation, at least one organization has submitted a proposal to undertake geographic capitation as a 5-year demonstration project (290). Under the proposal, Medicare would pay Blue Cross-Blue Shield of Maryland to insure beneficiaries rather than only to administer the program in Maryland (434).[10] Medicare would pay the plan a monthly amount based on the number of Medicare beneficiaries (434). Half of any profits would go to the Federal Government and the other half would be divided between Blue Cross-Blue Shield and beneficiaries, who would receive a rebate (434). Beneficiaries could choose from several options: traditional Medicare coverage, traditional health insurance, Blue Cross-backed HMOs, and a Blue Cross-sponsored PPO, whose physicians would charge lower fees. Other HMOs and CMPs would continue to relate directly with the Federal Government to be qualified and to enroll Medicare beneficiaries. HCFA is reviewing the proposal, and officials estimate that a decision will require several months (434).

Putting the fiscal intermediary at risk for medical expenditures would greatly change present incentives for carriers, who now receive a fixed amount per claim to administer the program, but who have no responsibility for the level of program expenditures. To control expenditures, a capitated carrier could encourage beneficiaries to opt for lower cost alternatives, such as HMO membership or physicians in a PPO; negotiate discounts with physicians and other providers in the context of a PPO or HMO; or pursue more stringent review of fee-for-service claims (70). HCFA's guidelines for those who are considering the submission of demonstration proposals state that the present system of payment for physician services based on customary, prevailing, and reasonable charges should be continued as an option for beneficiaries and providers. Although a fiscal intermediary could enlist providers or plans to agree to utilization control or expenditure caps, the intermediary could not impose such constraints (465).

It is not clear how several administrative matters would be handled under carrier capitation, such as enrollment of beneficiaries, establishment and updating of capitation payments, policy concerning case-by-case vs. mandatory assignment, and sharing of risk between Medicare and the carrier.

Quality of Care

A capitated carrier would have financial incentives to control the use of providers who continued to be paid on a fee-for-service basis. The effects on quality would depend on which services were constrained or reduced (194). Quality could improve if use decreased for services that provide little or no additional benefit, entail unreasonable risk for the potential benefit, or are employed in inappropriate settings. On the other hand, quality would be impaired if decreased use occurred for services that are now used appropriately or that are underused. An important element would thus be identifying services to target for utilization review. The carrier, perhaps with assistance from HCFA, might review the literature and work with panels of expert physicians to select inappropriately used services that would be amenable to utilization review.

If the capitation payment did not cover inpatient care, providers and carriers would have financial incentives to contain their own expenses by admitting patients to hospitals, a move that would be welcomed by hospitals paid more for additional admissions. The entity charged with quality assurance could pay particular attention to institutionalized patients. In addition, the risk-sharing arrangements between Medicare and the carrier or between the carrier and providers could share any savings from reduced hospitalization.

Medicare would have continuing responsibility to monitor the quality of care and to ensure that appropriate covered services were not being denied to beneficiaries (70). This function would have great importance in a situation that would be novel and perhaps initially confusing to beneficiaries. HCFA could draw on the experience of two Medicaid programs that operate through carriers, one in Texas and the other in California (564).

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[10] Blue Cross/Blue Shield of Maryland now acts as Medicare's intermediary for Part A services and as Medicare's carrier for Part B services.

Access to Care

Beneficiaries could experience problems of geographic access to physicians and other providers if the intermediary contracted with a limited number of providers in an area. Medicare could alleviate this problem by requiring that the intermediary enlist the participation of a minimum percentage of physicians of different specialties and perhaps make arrangements to pay for out-of-plan use, or by requiring that present arrangements remain an option for beneficiaries and providers. By contrast beneficiaries' access could be expanded if they were able to choose providers in PPOs and HMOs that were previously unavailable through traditional Medicare arrangements. Depending on the number of physicians and their practice preferences, beneficiaries in rural areas might not have access to an HMO or other practice forms (459).

The enrollment process could affect access to certain facilities, providers, and services. Whether Medicare or the intermediary conducted the enrollment process, it would be critical for marketing of options and enrollment of beneficiaries to be conducted fairly, without favoring or slighting any of the intermediary or nonintermediary-sponsored plans. Intermediaries would have a financial interest in encouraging enrollment in certain plans, such as the PPO, and in discouraging continuation of traditional Medicare arrangements. One possibility would be for the geographic intermediary to contract with HMOs that it did not sponsor and offer them as options to beneficiaries. That situation could inject some competition into arrangements with the intermediary and reduce the likelihood that low-cost beneficiaries would tend to be enrolled in plans sponsored by intermediary.. Regardless of who conducted the process, Medicare could review the marketing material and stipulate certain procedures to be followed. In any case, it would be desirable to limit Medicare requirements to measures needed to protect beneficiaries and not to discourage plans and providers from participating.

The enrollment of large numbers of beneficiaries in HMOs in Florida identified administrative problems regarding enrollment and disenrollment (477). Delay in updating beneficiary enrollment records led to initially incorrect payment decisions in some cases. Prior to signing TEFRA risk contracts in April 1985, HCFA initiated procedures designed to ensure that HCFA and carrier records are updated in a timely fashion (533).

Cost and Efficiency

Depending on risk-sharing arrangements and the results of utilization control, the Medicare program could achieve greater predictability over program expenditures and greater control over annual increases. Geographic capitation has been likened to a carrier-wide IPA or CMP that covered both enrolled and unenrolled beneficiaries (70). IPAs have varied tremendously in their success, and specifically in their ability to control use and to reduce total expenditures below that of comparison practices. The achievements of an intermediary-at-risk would, like those of IPAs, depend on its ability to negotiate with providers and to control their use of services.

Under the Texas Medicaid program, the Texas Purchased Health Program, there has been a substantial increase in total expenditures and an increase in hospital outpatient visits relative to physician office visits (564). The State sets the fees to be paid for services, and the carrier attempts to control volume of services. The capitation payment to the carrier covers hospital and physician services and ancillaries.

The Redwood Health Foundation is the carrier for all public assistance beneficiaries in three counties of California (564). Medi-Cal (California Medicaid) costs per enrollee in this area have been below the State average and the average in comparable counties, but slightly above costs per enrollee in prepaid health plans. Medi-Cal authorizes rates of fee-for-service payment. The carrier contracts risk-sharing arrangements with providers and conducts utilization and quality control.

Like capitation payment to health plans, geographic capitation should not entail additional costs for beneficiaries and might result in savings in additional benefits or reduced cost-sharing. The cost implications for other payers would depend on the desire and ability of plans and providers to increase their private rates and use.

Technological Change

Any change in technology would depend on changes in the market for medical services and in the incentives to use different types of care. Such implications are very tenuous, for the reasons outlined above. If geographic capitation resulted in cost constraints and greater cost consciousness among providers, the effects on technology would be similar to those described for capitation payment to health plans. On the other hand, geographic capitation might produce few changes in the delivery of medical care, and present incentives for technological change could continue.

Administrative Feasibility

Use of the AAPCC to determine capitation rates would be less problematic for Medicare under geographic capitation than under capitation to risk-sharing plans. A geographic intermediary would receive payments for large numbers of beneficiaries across which the risk would be spread. Payment to risk-sharing plans would require further refinement in the capitation rate to reduce the possibility of biased selection by beneficiaries or plans.

Quality assurance activities would differ from those historically undertaken, since the incentive of capitation payment is toward underprovision rather than overprovision of services. It is likely that some experience will be gained with these issues as PROs or their designates in the plans undertake the reviews required by the TEFRA regulations.

Both rate-setting and quality assurance would most likely require new data, for example, on health status, severity, or outcome measures (459). It would be most reasonable for HCFA to determine from research and demonstrations what kind of data was needed. HCFA might also wish to survey beneficiaries about enrollment to indicate their characteristics and motivations in selecting and changing plans. It would be important for HCFA to be judicious in its requirements for information so that intermediaries were not unduly burdened.

Both capitation payment to health plans and to geographic intermediaries would require that procedures be established regarding enrollment. As discussed above, geographic intermediaries may have conflicts of interest with respect to beneficiary enrollment in nonintermediary-sponsored plans. Under either capitation payment arrangement, however, it would be vital for HCFA and its intermediaries to coordinate their activities and to have timely, orderly, and accurate procedures for enrollment and disenrollment.

CONCLUSION

Capitation payment contains incentives for the recipients to control medical expenditures. Beneficiaries' welfare will be furthered if these incentives are expressed by providing care through a more efficient mix of services, reducing inappropriate care, or treating conditions before they become costly. Past experience of non-Medicare enrollees with HMOs, particularly with prepaid groups, has shown that capitation plans do care for enrollees at lower costs, while maintaining quality at levels equal to or better than comparison practices.

However, there is the danger that *future* plans or intermediaries may constrain expenditures at the expense of quality of care, by reducing or delaying appropriate services, or at the expense of access to care, by giving preference to low-cost over high-cost enrollees. Similar trade-offs apply to sharing financial risk with providers. Placing greater financial risk on physicians gives them a stronger incentive to contain costs, but also increases the likelihood that appropriate care will be reduced.

The major disadvantage of geographic capitation is the substantial market power given to the intermediary, not only with regards to plans competing for beneficiaries to enroll, but also in relation to the Medicare program. A geographic intermediary would be in a strong position in negotiating capitation rates with Medicare because of the difficulty that Medicare would face if the intermediary opted out of the arrangement after a few years. From the intermediary's perspective, an important factor would be the reliability of Medicare in continuing this payment approach and in paying rates considered reasonable by the intermediary.

The extent to which plans and providers are pushed to be efficient depends on the level of payment as well as the method of payment. At lower levels of capitation payment, there would be a greater likelihood that lower use and cost would be achieved at the expense of quality. Moreover, if relative payment rates diverged from the cost of resources required to care for high-cost and low-cost beneficiaries, plans would be more likely to concentrate on marketing strategies to seek low-cost enrollees and less likely to urge providers to deliver cost-effective care.

It is difficult to predict the implications of widespread Medicare capitation payment on the basis of financial incentives and past experience. Medicare enrollment in risk-sharing plans has only recently reached substantial numbers, mostly in demonstration projects that remain to be evaluated. And one cannot assume that new plans, which differ in size, sponsorship, organization, and risk-sharing arrangements from the older, well-studied ones, will achieve similar results in cost, quality, and access. Geographic capitation for Medicare beneficiaries is completely untried as yet, and little experience exists at the State level under Medicaid.

Capitation payment, especially to risk-sharing plans, has the potential to moderate the growth in Medicare expenditures while providing beneficiaries with good quality care. The challenge is to develop a method for setting capitation rates that provides incentives for intermediaries and providers to deliver cost-effective care and to provide access to all beneficiaries.

Appendixes

Appendix A

Method of the Study

The Deficit Reduction Act of 1984, Public Law 98-369 (Sec. 2309), mandated OTA to conduct a study of physician payment under Medicare. In addition, the Senate Special Committee on Aging requested OTA to analyze the effects of physician payment on medical technology, with particular attention to payment of physician services under Part B of Medicare. On June 21, 1984, the OTA Technology Assessment Board approved the proposal for this project.

During the early part of the project, OTA staff consulted with professional associations for suggestions of candidates for the study's advisory panel. The advisory panels for OTA studies guide OTA staff in selecting material and issues to consider and review the written work of the staff, but the panels are not responsible for the content of the final reports. The advisory panel for this study consisted of members from various interested parties: medical specialties; corporate health benefits; health insurers; carriers; consumer advocacy groups; and scholars in medical ethics, economics, and health policy analysis. Sidney Lee, president of the Milbank Memorial Fund and chair of the standing OTA Health Program Advisory Committee, chaired the advisory panel for this study.

The first meeting of the advisory panel was held on September 10, 1984. Before the meeting, the staff began preliminary research into the issues involved in Medicare physician payment and prepared a draft outline for the study. During the meeting, the panel was asked to define and narrow the scope of the task of studying Medicare physician payment. Staff from the Health Care Financing Administration, the Institute of Medicine of the National Academy of Sciences, and the Congressional Budget Office reported on the progress and emphasis of their complementary studies on physician payment to help define the focus of OTA's assessment.

After the meeting, the project staff refined the project outline and identified for analysis four alternative approaches to medicare payment for physician services: 1) modifications in Medicare's traditional customary, prevailing, and reasonable method of payment; 2) payment based on fee schedules; 3) payment for packages of services; and 4) capitation payment. The staff also selected five medical technologies for in-depth examination of the effects of payment alternatives. Contracts were let for background papers that would each examine one of the five technologies: pneumococcal vaccination, clinical laboratory services, magnetic resonance imaging, extracorporeal shock wave lithotripsy, and cataract surgery.

On January 29, 1985, a workshop was held to discuss empirical research on the effects of particular payment mechanisms. The workshop, under the chair of Uwe Reinhardt, professor of economics at Princeton University and advisory panel member, included members of the advisory panel and others experienced in the use of databases available from Medicare carriers. In light of the information gained from this workshop, the OTA staff let two contracts for empirical studies on the issues related to fee schedules and capitation payment.

The project was discussed further at the February 11, 1985 meeting of the Health Program Advisory Committee, an independent body of experts that advises the OTA Health Program. Discussion centered around the availability of data on physician incentives under various forms of payment and the relative uncertainty about the effects of particular changes.

Another set of background papers was commissioned to elicit comparative perspectives on potential methods of paying for physician services. One contractor was chosen to write a background paper on the experience of the Canadian Government in financing a national system of payment for physician services on the basis of fee schedules. Another contractor wrote of the experience of the Kaiser-Permanente Medical Care Program in paying its physicians on a capitation basis.

In addition, contractors were chosen to write background papers on the implications of the alternative payment methods for quality of care and ethical issues, matters that are common to all of the alternatives.

The second meeting of the advisory panel was held on March 7, 1985, to bring the panel members up to date on the progress of the report. The panel reviewed draft background information intended for the final report. The panel also gave advice on issues for the chapters on the specific payment alternatives.

During the spring and summer of 1985, the project staff reviewed the available literature relating to the various payment methods. Draft background papers were also received throughout this time, and the drafts were critiqued by the project staff, by advisory panel members, and by outside reviewers with expertise in the relevant fields. The staff also organized a workshop, held on June 13, 1985, on the administrative issues relating to possible changes in Medicare payment of physician services. The workshop participants, under the chair of Sidney Lee of the advisory panel, included representatives from the Health Care Financ-

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ing Administration, current Medicare carriers, other insurers, and members of the advisory panel.

The staff prepared a draft report, which was discussed at the final meeting of the advisory panel on October 10, 1985, and at the meeting of the Health Program Advisory Committee on October 18, 1985. The draft was also sent to other experts and interested parties for review. During October and November 1985, the project staff revised the report in response to reviewers' comments and sent selected chapters for additional review to members of the advisory panel. After subsequent revision, the staff prepared a final draft, which was submitted in mid-December to the Technology Assessment Board for approval.

Other documents in addition to the main report were prepared in connection with this assessment. A case study, *Effects of Federal Policies on Extracorporeal Shock Wave Lithotripsy*, was prepared by the project staff and will be available through the U.S. Government Printing Office. In addition, the following papers were prepared on contract to OTA to provide background information for the main report and are available through OTA in limited quantities:

- "The Frozen North: Controlling Physician Costs Through Controlling Fees," by Morris L. Barer, Robert G. Evans, and Roberta Labelle, University of British Columbia;
- "Evaluation of Ethical Implications of Selected Alternatives for Paying Physicians Under the Medicare Program," by Alexander M. Capron, University of Southern California;
- "Payments to Physicians in the Permanente Medical Group," by Morris F. Collen, Northern California Kaiser-Permanente Medical Care Program;
- "Background Paper on Cataract Surgery and Physician Payment Under the Medicare Program," by Louis P. Garrison, Jr., and Sandra M. Yamashiro, Project HOPE Center for Health Affairs;
- "Evaluation of Effects on the Quality of Care of Selected Alternatives for Paying Physicians Under the Medicare Program," by Glenn T. Hammons, Robert H. Brook, and Joseph P. Newhouse, The Rand Corp.;
- "Reform of Medicare Physician Payment Policies: Impact on Magnetic Resonance Imaging Technology," by Lisa I. Iezzoni, Oren Grad, and Mark A. Moskowitz, Boston University Medical Center;
- "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," by David A. Juba, The Urban Institute;
- "The Effects on Clinical Laboratory Services of Selected Alternatives for Paying Physicians Under the Medicare Program," by Lois P. Myers, John M. Eisenberg, and Mark V. Pauly, University of Pennsylvania;
- "Implications of Alternative Medicare Payment Methods for Pneumococcal Vaccination," by Michael A. Riddiough, Riddiough & Associates;
- "Extracorporeal Shock Wave Lithotripsy: Clinical Applications and Physician Payment," by Jonathan A. Showstack, Eliseo J. Perez-Stable, and Eric Sawitz, University of California, San Francisco; and
- "Issues in Capitation: Risks of Financial Ruin for Providers and Ways To Control This Risk," by James Vertrees, Dennis Tolley, and Kenneth Manton, La Jolla Management Corp.

Appendix B

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Appendix C

Medicare and Medicaid Payment for Physicians' Services

Introduction

Third-party payment practices for physicians' services are complex and diverse. Third-party payers in the United States have traditionally paid a fee for each service[1] provided by physicians. Nonetheless, there are a variety of approaches in actual payment practices under fee-for-service among third-party payers, including public programs. Diversity is expected because fee-for-service is a generic term that includes multiple elements (e.g., payment basis, level determination, and payment updating schedule) that can be combined in numerous ways. Furthermore, public programs have broad policy discretion within Federal legislation, regulation, and guidelines in designing payments for physicians.

This appendix describes third-party payment for physicians' services in the public sector, focusing on the Medicare program. A general description of the Medicare program is followed by a summary of the origins of the fee-for-service method adopted by the program and a description of the current payment methods for physician services under Medicare. Although fee-for service by far is the most common method, the Medicare program has adapted it in numerous ways for special circumstances and has sometimes used other payment methods. This appendix also includes a section on physician payment under Medicaid, highlighting similarities to and differences from the Medicare program.

Medicare Payment for Physicians' Services

The 1965 legislation that established Medicare under Title XVIII (Health Insurance for the Aged and Disabled) of the Social Security Act mandated eligibility for insurance benefits for most Americans 65 years and over.[2] On July 1, 1973, the Social Security Amendments of 1972 (Public Law 92-603) extended eligibility to persons under 65 who have been entitled for a period of 24 months to Social Security or Railroad Retirement benefits because they are disabled, and to most workers and their dependents with end-stage renal disease (ESRD).

Medicare covers hospital insurance benefits (Part A) and supplementary medical insurance benefits (Part B). Table C-1 displays Medicare's current benefits and the financial responsibilities of the program and its beneficiaries under Parts A and B. Part A's primary purpose is to provide insurance against the costs of inpatient hospital care. Other benefits include payment for inpatient psychiatric services, skilled nursing facility services, home health services, hospice services, and comprehensive ambulatory rehabilitation facility services. Payment for most physician services is under Part B, which also includes payment for outpatient hospital services, ambulatory laboratory and X-ray services, ambulatory physical therapy and speech pathology services, and various other limited ambulatory services and supplies, such as prosthetic devices and durable medical equipment (see table C-1). Part B also covers home health services for those Medicare beneficiaries who have Part B coverage only. The law excludes most preventive services and certain other services, such as dental and custodial care.

In order to pay for a new technology (service) that is not mandated or prohibited by law, a decision to cover the specific service, or technology, is required. (Coverage is distinguished from payment in that coverage refers to benefits available to eligible beneficiaries, and payment refers to the amount and methods of payment for covered services (585).) Impressive advances in the numbers and types of technologies available to the health care system in recent years has led to an increasing need for coverage decisions. Medicare decides whether or not to cover a service on the basis of Section 1862 of the Social Security Act, which prohibits payment for items and services that are "not reasonable and necessary for the diagnosis or treatment of illness and injury or to improve the functioning of a malformed body member." The criteria Medicare uses to determine if a technology meets the broad statuatory language of "reasonable and necessary" are: 1) general acceptance as safe and necessary, 2) not experimental, 3) medically necessary, and 4) provided according to standards of medical practice in an appropriate setting.[3]

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[1] Throughout this appendix, the terms service and technology are used as synonyms.

[2] Although eligibility for Part A is tied to eligibility for Social Security, at the onset of the program, individuals who were age 65 and not eligible for Social Security were given 3 years to establish eligibility (445).

[3] The OTA report *Medical Technology and Costs of the Medicare Program* (486) includes a comprehensive discussion of Medicare's coverage process.

Table C-1.—Medicare Benefits and Limitations, as of January 1986

Kind of care	Medicare pays	Beneficiary pays	Comments
Part A:			
Hospitalization	1-60 days 61-90 days 91-150 days (60 day lifetime reserve) After 150 days—no coverage	Initial deductible ($492) Daily copayment ($123) Daily copayment ($246)	Deductible and copayments are adjusted annually Lifetime reserve can be used only once
Psychiatric	Same as hospitalization	Same as hospitalization	Lifetime limitation of 190 days of coverage
Skilled nursing facility	1-20 days 21-100 days After 100 days—no coverage	Nothing Daily copayment ($61.50)	
Home health services	Unlimited visits Reasonable costs	Nothing	Beneficiary must be eligible for Part A
Hospice care	Prospective payment rates, per day to maximum of $6,500 average "cap" per beneficiary to each facility Routine home care: $53.17 Inpatient respite[a] care: $55.33 General inpatient care: $271.00 Total continuous home care: $358.67	5% of cost to program for: —Drugs and biologicals (not to exceed $5 per prescription) —Inpatient respite [a] care (per day) (total not to exceed inpatient deductible)	Beneficiary may elect hospice care in lieu of other medical care services (with its attendant deductibles and copayments), for two periods of 90 days and one of 30 days, to be taken in that order, upon determination of a terminal illness Benefit provision expires Sept. 30, 1986
Part B:		SMI basic premium—$15.50/mo	
Home health services	Unlimited visits Reasonable costs	Nothing	Beneficiary eligible for Part B only
Physician and other medical services	80% of approved charges after deductible is met 100% of approved charges for services provided in approved ambulatory surgical center or hospital outpatient department if the physician accepts assignment	Initial deductible ($75) 20% of approved charges Excess of physician charges above approved charges if physician does not accept assignment of benefits	
Immunizations	Pneumococcal vaccine Hepatitis B vaccine (for ESRD patients and others at high risk of hepatitis)	Nothing for covered vaccines, deductible does not apply All costs for all other vaccines	
Chiropractors' services	Manual spinal manipulation	All other charges	
Most routine foot care	Nothing	All charges	
Dentists' services	Jaw surgery, setting of facial fractures, treatment of oral infections	All other charges	May cover other dental services when incident to the provision of covered medical services
Dentures	Nothing	All costs	
Routine hearing and eye exams	Nothing	All costs	Examinations may be covered as incident to other diagnostic and therapeutic procedures, e.g., prior to surgery to correct hearing and vision disorders
Eyeglasses and hearing aids	Nothing	All costs	
Routine physical examinations	Nothing	All costs	Examinations covered as incident to diagnosis and treatment
Prosthetic devices	Those needed to substitute for an internal body organ, or for artificial limbs and eyes, and arm, leg, back, and neck braces	All costs	
Durable medical equipment	If rented, approved charges If purchased, monthly payments until Medicare's share is paid or equipment is no longer necessary For long-term use, payment may be made in a lump sum	20% coinsurance	Equipment furnished by provider is paid by Part A intermediary on a reasonable cost basis
Medical supplies	Dressings, splints, and casts	All other costs (e.g., common first aid supplies purchased by patient)	Physicians may bill for supplies provided at cost to them

Table C-1.—Medicare Benefits and Limitations, as of January 1986—Continued

Kind of care	Medicare pays	Beneficiary pays	Comments
Blood	For all but first 3 pints	First three pints or replace	
Outpatient mental illness	62.5% of reasonable charges up to $500 (i.e., $312.50)	37.5% of reasonable charges up to $500, and 100% of charges above $500	
Outpatient physical therapy	In doctor's office, 80% of approved charges after deductible is met	$75 deductible and 20% coinsurance	
	From physical therapist, $400/yr. maximum	All costs above $400/yr	
	From clinic, home health agency, or other agencies, 80% of approved charges after deductible	$75 deductible and 20% coinsurance	
End-stage renal disease treatments	80% of prospectively determined, per treatment regionally adjusted rates Physicians' services incident to maintenance dialysis, 80% of monthly capitation rates	$75 deductible and 20% coinsurance	Coverage ends 12 months after the month maintenance dialysis stops or 36 months after month of kidney transplant
Comprehensive outpatient rehabilitation facilities (CORF)	Lesser of 80% of reasonable cost or the reasonable cost minus 20% of reasonable charges	$75 deductible and 20% of customary charges	In order for the beneficiary to receive reimbursement for CORF services, a physician must submit a plan of treatment which must be reviewed every 60 days. Coverage ends when no further progress is being made with respect to the goals specified in the plan
Rural health services	80% of prospectively determined all-inclusive per visit rate	$75 deductible and 20% coinsurance	

[a] Respite care is defined as short-term (limited to 5 days) inpatient care provided to the individual only when necessary to relieve the family members or other persons caring for the individual during period of hospice election.

SOURCE: Commerce Clearing House, Inc., *Medicare and Medicaid Guide* (Chicago, IL: Commerce Clearing House, Inc., 1985).

Part A is an entitlement program and is available without payment of a premium to those eligible.[4] Individuals who are not automatically entitled may voluntarily obtain insurance by paying the full actuarial cost of such coverage ($174 per month in 1985) (471). Individuals eligible for Part A are automatically enrolled in Part B unless they indicate they do not wish to be enrolled. Any citizen or legal alien for 5 years who is age 65 and older, even individuals who are not eligible for Part A, may enroll in Part B, a distinct program under Medicare. Participation in Part B is voluntary and requires payment of a monthly premium.[5] The Part B, premium is deducted automatically from monthly Social Security checks, except in cases where States pay the premium or when work or some other event precludes payment of the monthly benefit check. Participation in Part B is high. In 1982, 99 percent of the eligible elderly and 92 percent of eligible disabled people in Part A were also enrolled in Part B (467). Medicare is administered through private contractors (intermediaries for Part A and carriers for Part B), all of whom maintain a private business as well as the Government contract business. In fiscal year 1984, Medicare had 60 carrier jurisdictions that were serviced by 39 carriers: 28 Blue Cross/Blue Shield Plans and 11 others (514).

Fee-for-Service Payment

Background.—By the early 1950s, the movement for a national health insurance program for the entire population that began in the 1930s had become a proposal to assist Social Security beneficiaries with the costs of hospitalization. However, despite the limited nature of proposed health insurance legislation, successive attempts at passage failed until 1965, when President Johnson's active interest in a health insurance program during and after his successful bid for reelection and striking changes in the political composition of Congress overcame the resistance of opponents (27). The knowledge that some form of Medicare would pass caused some opponents to facilitate enactment of Government health insurance for the elderly and other opponents to sponsor health insurance bills for the elderly for the first time (287).

In early 1965, revised versions of bills sponsored by the Administration (H.R. 1 introduced by Rep. Cecil R. King and S. 1 introduced by Sen. Clinton Anderson) were reintroduced, and Rep. James Burns, a former opponent, sponsored H.R. 4351—a Government health insurance bill. The King-Anderson bill called for compulsory contributions and was closely associated with the Social Security system. It limited benefits to hospital care, nursing home care, and home health care. The Burns bill included physician and other medical services as well as inpatient services. It provided for voluntary participation and a Government subsidy, and was separated from the Social Security system (445). The Burns bill was modeled on a high-option Aetna policy available to members of the Federal Employees Health Benefits Program (27,580).

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[4] Thirty percent, or 4 million, of State and local employees are the major group of individuals currently not eligible for Part A (27).

[5] The Part B premium was $15.50/month as of Jan. 1, 1985.

In a strategic move, Rep. Wilbur Mills, chairman of the House Ways and Means Committee, proposed incorporating elements of both the King-Anderson bill and the Burns bill into Title XVIII of the Social Security Act.[6] Title XVIII retains the basic philosophy of both bills. Although insurance for hospital services, Part A of Title XVIII, is financed by compulsory contributions of employers and employees through the Social Security system, insurance for physician services, Part B of Title XVIII, is voluntary and is financed from premiums paid by the insured and general revenues.

The nonregulatory approach of H.R. 4351 was incorporated into the following statutory language (580):

> . . . where payment . . . is on a charge basis, such charge will be reasonable and not higher than the charge applicable for a comparable service and under comparable circumstances to the policy holders and subscribers of the carrier . . . In determining the reasonable charge . . . there shall be taken into consideration the customary charges for similar services as well as the prevailing charges in the locality for similar services.

Although longstanding advocates of Medicare legislation had recognized that basing physician payment on physician charges was potentially inflationary,[7] they also knew that it was impractical to contest the method. If Medicare was to be passed, Rep. Mills' support was necessary, and tampering with his package in this major way would jeopardize his approval (27). Furthermore, the logical alternative, i.e., paying physicians on the basis of prospectively determined fees, exercised more control over physicians than a charge-based method and might have adversely affected physicians' cooperation with the program (287).

Fee schedules were a traditional payment method for physician services in the United States that had the advantages of uniformity and ease of understanding by both patients and physicians. On the other hand, the charge-based method that Congress adopted was relatively new—it had first been used by a Blue Shield plan in Wisconsin in 1954. Blue Shield had also initiated a "prevailing fee program" for national accounts, which was designed to permit physicians to establish charges for their services without being limited by fee schedules or income levels (312). Furthermore, the method afforded physicians considerable latitude in establishing payment levels and was considered less intrusive than fee schedules in a physician's financial decisions.

Specific definition of the terminology used in the legislation was lacking, but " . . . fears of a physicians' boycott and the absence of an obviously attractive alternative, persuaded Senate reformers not to raise further questions about the sensitive issue of what constituted reasonable charges" (287). The congressional intent to make health care for aged citizens available without regard to income level was evident in the report of the Committee on Ways and Means to accompany H.R. 6675. The report states, "where payment is on the basis of assignment, the reasonable charge would have to be accepted as the full payment" (478). In the late 1960s and 1970s, the original statutory language was clarified by a series of regulations and administrative guidelines. In attempts to strengthen Government control over physician payment and to restrain the rising costs of the Part B program, tighter controls on the operations of the carriers were developed by increasing the frequency of updating physician charges and by freezing charge limits for various periods of time (27,565).

The payment method and its administration described below have perpetuated a loosely administered, decentralized system with differences in payment levels among physicians. The implications of the Medicare payment system for current Part B costs and other effects of the payment system are discussed in chapter 2 of this report. Significant refinements to the current system are considered in chapters 4, 5, 6, and 7.

Current Status.—As noted earlier, Title XVIII of the Social Security Act specifies that payment for physician services under Part B of Medicare are to be made on the basis of *reasonable charges* that are computed from usual, customary, and prevailing (CPR) charges.[8] The Part B program generally pays 80 percent of reasonable charges in excess of the beneficiaries' annual Part B deductible, $75 in 1985.

Medicare carriers, private contractors that receive, process, and pay claims for Part B services, have the primary responsibility for determining the reasonable charge for each service provided. Their determinations are to be consistent with the law, regulations, and general principles and guidelines issued by the Health Care Financing Administration (HCFA) (509). Although the basic formula is applied uniformly nationwide, carriers exhibit great variation in executing the methodology in such areas as locality designation and specialty recognition because of the autonomy offered by the law and implementing instructions.

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[6] The "Eldercare" bills, H.R. 3727 and H.R. 3728, became Title XIX of the Social Security Act.

[7] In the 1965 Senate debate, the leading Senate proponent of Medicare, Sen. Clinton Anderson noted that paying physicians their "usual and customary fees (the Burns suggestion) would significantly and unnecessarily inflate the cost of the program to the taxpayer and the aged" (287).

[8] Both usual, customary, and reasonable and CPR refer to a general system of computing a payment level based on historical and comparative profiles of physicians' charges. Since CPR is Medicare terminology, it will be used in this report. The terms reasonable, allowed, and approved are used as synonyms in this appendix.

Based on claims information, Medicare carriers maintain records of the services provided and the charges billed by physicians in their charge area. The carriers then develop individual statistical profiles and areawide statistical profiles of physician charges, which are updated annually and are in effect for a "fee screen" year.[9] The standards per fee screen year have been based on charges submitted during the calendar year preceding the fee screen year, creating a lag period in updating (509). For example, the charge limits for the fee screen year July 1, 1982 to June 30, 1983, were based on charges received during the preceding calendar year January 1, 1981 to December 31, 1981 (509).

The *reasonable charge* is the lowest of a physician's *actual charge*, a physician's *customary charge* (Level 1 fee screen), or the area's *prevailing charge* (Level 2 fee screen). There are special circumstances when the reasonable charge may not be the lowest of the above three charges. If there are unusual circumstances or medical complications causing essentially different services to be provided, the actual charge for the service may be specified as the reasonable charge even though the actual charge is higher than the customary charge and prevailing charge. The Social Security Act requires that the reasonable charge for a service may not be higher than the charge for a comparable service provided under comparable circumstances to a carrier's non-Medicare subscribers.

The actual charge is the charge the physician has billed for the service provided. The customary charge is the physician's median submitted charge during the data collection period preceding the fee screen year.[10] The customary charge is fluid. If a physician revises his or her fees, the carrier will recognize the change when processing claims with the new charges.

Until 1976, the prevailing charge for a service was the lowest charge for the service that was greater than or equal to a percentile of the distribution of physicians' customary charges weighted by the number of times each physician billed for the service in a locality (designated as a "charge area") the previous calendar year. The prevailing charge limits were originally paid by some individual carriers at the 90th percentile. Medicare later set prevailing change limits at the 83rd percentile in 1969, and they have remained at the 75th percentile since 1971 (496).

The Social Security Amendments of 1972 (Public Law 92-603) placed further limits on the yearly increases in prevailing charge levels—because of subsequent congressional action to prevent a rollback in approved charges, these limits were not fully implemented until 1976. The amendments established a Medicare Economic Index (MEI) that relates the rate of increase in physicians' fees to increases in general earning levels and increases in physician practice costs. The index, which is updated annually for a 12-month period beginning July 1, sets an annual cap on prevailings. Prevailing charges are now either the lesser of the prevailing charge ("unadjusted" prevailing) or the product of the 1973 fee screen year prevailing charge multiplied by the value of the current MEI ("adjusted " prevailing) (116). The MEI for 1983 was 2.063. If a prevailing charge for a certain service was $10.00 in 1973, and if the "unadjusted" prevailing was no less than $20.63, the prevailing charge for fiscal year 1983 would be $20.63 (the "adjusted" prevailing). However, if a prevailing charge for a certain service was $10.00 in 1973, and if the "unadjusted" prevailing in 1983 was less than $20.63, the prevailing would be set at the charge that is less than the $20.63 (the "unadjusted" prevailing).

In implementing the CPR approach, each carrier is allowed considerable latitude in delineating a charge area. Carriers are expected to delineate localities based on their knowledge of local charging practices, service patterns, and differences in population density, economic levels, and other factors that affect charges for services. Charge areas are usually a subdivision of a State that includes a cross-section of the population (509). Thus, there is no uniform geographic configuration for a charge area. Four types of locality configurations are: 1) statewide localities, 2) regional localities (contiguous counties) without specific regard to urban/rural distinctions, 3) urban and rural localities comprised of noncontiguous areas, and 4) separate localities for major metropolitan areas with nonmetropolitan areas consolidated into one or more localities. Currently there are 240 geographic charge localities (514).

Charge areas may also differ according to types and levels of services. For example, a carrier may decide in determining a prevailing fee screen that a State has seven localities for general practitioners, but only one locality (the entire State) for members of a particular specialty.

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[9] As a result of provisions of the Deficit Reduction Act of 1984, discussed later, the fee screen year as of October 1, 1984, was changed from July 1-June 30th to October 1-September 30th and charge limits for the fee screen year will be based on charges submitted from April 1-March 30th of the previous year.

[10] The customary charge for a service provided by physicians beginning a new practice is based on the 50th percentile of the customary charges in a charge area weighted by how often physicians billed for the service (509).

In calculating the customary charge, the carrier not only considers charges made by physicians to Medicare beneficiaries, but also considers charges made by the physicians to their patients in general. The amount of non-Medicare data included in the computation varies among carriers according to the size of their non-Medicare business (509).

Furthermore, carrier practice concerning specialty recognition for the purpose of determining prevailing charges is also extremely variable as it is meant to reflect the existing patterns of charges within a locality. The variation in carrier practice ranges from carriers that use a single prevailing charge screen for services of all physicians[11] to those carriers that calculate separate prevailing charge screens for individual specialties. Blue Shield of Pennsylvania, for example, has individual charge screens for more than 50 distinct specialties (458). Some carriers calculate a prevailing charge screen for general practitioners and a prevailing charge screen for all other physicians. Other carriers group specialties into other categories, so that there may be one prevailing charge for all surgical specialties and another prevailing charge for medical specialties. Massachusetts constructs prevailing charge screens by type of service and recognizes 25 specialties in constructing prevailing screens for visits and consultative procedures, but only two groups (general and family practitioners, and other physicians) for other procedures (475).[12]

The recognition of specialties is a complex issue, confounded by the lack of a clear definition of a specialist within the medical community.[13] Eighty-two specific physician specialties and subspecialties are reported by physicians and included in the Masterfile of the American Medical Association (124). At this time, some carriers define a specialist as one who is board-eligible in a particular specialty, and others limit the designation only to board-certified physicians. Still other carriers define specialists as physicians who classify themselves as such and who limit their practice to a particular specialty (30).

Medicare carriers frequently rely on relative value studies if there are insufficient charge data about a particular physician's use of a specific service to determine a customary charge screen or if there are insufficient data about the use of a service in a charge area to determine a prevailing charge.[14] Physicians also rely on such studies when determining a fee for a new service.

Relative value studies express the relationship between services in unit values and not dollar amounts.[15] In determining a physician's customary charge for a service, the carrier multiplies the relative value of the service and a monetary conversion factor that is derived from a physician's known customary charges for similar services in the same category of service (e.g., medicine, surgery, and radiology). In determining the prevailing charge for a service, the carrier multiplies the relative value of the service and a monetary conversion factor derived from the fully adjusted prevailing charges for other services in the same category (509). Thus, an important factor in price determination is the monetary conversion factor which, when used as a multiplier, establishes the price (or payment level) for a service. The conversion factor can be changed to decrease or increase the price of services, and different conversion factors can be used to develop different prices for the same service depending on locality, medical specialty, or other factors.

Relative value studies are also procedural terminology documents that health professionals use in describing (coding) services when claiming insurance payment and for other purposes. The number of terms in the various studies has increased dramatically over the years. For example, the number of terms in the Current Procedural Terminology of the American Medical Association increased from 2,084 in 1966 to 6,132 by 1977 and to 7,040 by 1985. The increase in coding terms is intended to provide physicians with more accurate descriptors of the services provided. It also provides physicians with flexibility in describing services.

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[11] Carriers for the States of Florida, North Dakota, and South Dakota, the State of Kansas excluding Kansas City, western New York, and the combined territories of the Puerto Rico and the Virgin Islands use a prevailing charge screen for the services of all physicians. The American Society of Internal Medicine has brought suit against Florida Blue Cross Blue Shield to force recognition of specialists. The court suit also concerns differentiating between physicians and nonphysicians who use the same codes for a service, and discriminating between specialists and levels of expertise. The suit was withdrawn in 1985.

[12] The variation in carrier practice can be explained by the lack of the specificity of the regulations concerning specialty practice and the wide latitude allowed carriers in implementing instructions. The regulations stipulate that: 1) carriers should be responsive to differentials in levels of charges among different kinds of services in establishing prevailing charge levels; 2) where general practitioners and specialists in a locality have established different levels of fees for their services, the carriers should recognize such differences in establishing prevailing charge screens; and 3) when the physicians have not themselves established fee differentials based on specialty practice, the carrier should not establish artificial ones (42 CFR 405.504).

[13] An important step on the part of the medical community in defining a medical specialist was taken on Mar. 20, 1984, when the Ad Hoc Committee on Designation of a Specialist of the Council of Medical Specialty Societies released guidelines for the designation of a physician as a specialist. The guidelines do not accept self-designation alone, but list four objective criteria to be used in verifying specialty designation.

[14] In order for a carrier to have a sufficient statistical base on which to calculate a physician's customary charge for a specific service, the physician must submit three claims for that service. And, a minimum of four customary charges for a particular service are required for calculating the prevailing charge for the service in a locality (88).

[15] The antitrust implications of relative value studies have been under examination by the Federal Trade Commission (FTC) and the Justice Department in the past. Continued publication and revision of a number of relative value studies, including the California Relative Value Study, were halted after the settlement of a series of lawsuits in the mid and late 1970s. The antitrust implications of relative value studies depend on the extent to which the members of the groups and output involved in their construction attempt or wish to influence prices and output; thus, the use of relative value studies by the medical professions can be questioned if the intent of the physicians is to fix fees. However, their use by health insurers when determining payment levels for physician services appears to "serve a valid function" (266). Recently, a few medical societies have approached the FTC for advisory opinions concerning the development or updating of new relative value guides and a reexamination of the previous orders. The current standing of the issue is discussed in ch. 5.

Recently the Deficit Reduction Act of 1984 (Public Law 98-369) mandated a fee freeze, which started on July 1, 1984, of Medicare customary and prevailing charges for physicians' services. Although the freeze is scheduled to continue only until September 30, 1985, the administration has recommended extending the freeze for another year (552). The conditions of the freeze are dependent on assignment arrangements and are discussed in a section below.

Special Provisions.—There are special provisions for hospital-based physicians, teaching physicians, and physician services in intermediate care facilities.

Hospital-Based Physicians.—Hospital-based physicians are defined as physicians who provide ancillary medical services in a hospital setting. The three "traditional" hospital-based specialties are radiology, pathology, and anesthesiology, although a number of other types of practices, including emergency medicine, rehabilitation medicine, and cardiology, sometimes meet this definition.

Since the beginning of the Medicare program, the Federal Government has made special provisions for paying hospital-based providers, because the program requires the separation of charges for professional and hospital services and because the services hospital-based physicians provide are so closely allied with hospital services. A physician's professional service—a service that contributes to the diagnosis or treatment of the patient—is paid on a charge basis under Part B. Other services performed by physicians, such as administrative or quality control activities, are considered hospital services and are reimbursed under Part A.

In order to simplify reimbursement and claims processing, the 1967 Amendments to the Social Security Act (Public Law 90-248) allowed "combined billing" to be used by hospitals for radiology and pathology services furnished to inpatients, and all physicians' services furnished in hospital outpatient departments. Under combined billing, the hospital uses a single billing form for both the professional and hospital components of inpatient radiology and pathology services. The professional component was identified as a fixed proportion of the total bill for services. Combined billing could be used only if all the physicians in the radiology or pathology departments had a salary or percentage arrangement with the hospital.[16]

The 1967 amendments also specified that radiology and pathology professional services rendered to hospital inpatients were to be reimbursed at 100 percent of reasonable charges. Beneficiaries bore no liability for copayment of those services. Because the charges that radiologists and pathologists billed to their carriers continued to be reimbursed at the 80 percent level, this provision was justified as eliminating coinsurance payments by beneficiaries to physicians whose services were not the choice of the beneficiary. It was also intended to reduce hospital-based physicians' incentives for separate billing and thereby reduce processing costs to providers and to the Social Security Administration, even though it made more Federal dollars available for financing hospital-based services (451). The intermediaries paid the combined billing charges, and adjustments were made on an actuarial basis between the two Medicare revenue sources to account for Part B charges being paid by Part A intermediaries. The hospital was paid on the basis of cost, using the charges to compute the cost. The allocation between the Part A and Part B trust fund was based on the physician's allocative agreement.

The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) (Public Law 97-248) modified the way Medicare pays hospital-based physicians. Section 112 eliminated the provision that Medicare pay 100 percent of the reasonable charges for pathology and radiology services delivered to hospital inpatients. These professional services became subject to the same deductible and coinsurance requirements as other Part B services. Moreover, HCFA determined that the special processing routines required for combined billing were not justified since the option was never widely used, and in implementing regulations eliminated combined billing as of October 1, 1983 (48 FR 39740).

More importantly, TEFRA mandated a clearer distinction between Part A hospital services and Part B physician services, regardless of the doctor-hospital relationship. The regulations implementing Section 108 of the legislation restated and clarified the criteria that must be met for a physician's service to be paid on a reasonable charge basis under Part B. In addition to the existing requirements that the service be personally furnished by the physician and contribute to the diagnosis or treatment of an individual patient, a requirement was added that the service ordinarily require performance by a physician (48 FR 8902). If the physician is salaried by the hospital or is on a percentage arrangement, the carrier is required to develop customary charges based on the compensation that the physician receives for the services.

TEFRA also mandated that all physician services that do not meet the conditions for charge payment, but benefit a hospital or the patient population as a whole, are considered hospital services and are to be reimbursed under Part A. Physicians who receive any compensation from the hospital must have formal agreements that specify time and reimbursement for any Part A services or that provide the basis of allocation of payment between Part A and Part B services. The regulations implementing TEFRA provided that the reasonable cost reimbursement for physicians' services paid under Part A could not exceed "reasonable compensation equivalent" limits that HCFA developed based on physicians' average net income adjusted for specialty, location, and hours worked. The reasonble compensation equivalent limits never became an important factór except for hospital outpatient services, since the implementation of TEFRA and the Social Security Amendments of 1983, which replaced cost-based reimbursement for inpatient services with a prospective payment system based on rates determined by diagnosis; both started October 1, 1983. Part A inpatient physician services are covered by prospective payment just like any other Part A inpatient service.

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[16] Hospital-based physicians are compensated for their services primarily by salary, percentage of departmental revenue, or fee-for service, with fee-for-service becoming the predominant important method. Many variations and combinations of methods have been developed to meet specific needs of physicians and hospitals.

TEFRA also mandated specific provisions governing reimbursement for radiologists, pathologists, and anesthesiologists. The hospital-based radiologist became subject to a limit of 40 percent of the prevailing fee services generally available in radiologists' offices in the community. TEFRA regulations permit payment on a reasonable charge basis to anesthesiologists for up to four concurrent procedures if the anesthesiologist also meets specific guidelines defining appropriate patient care. If an assisting nurse anesthetist is employed by the anesthesiologist, the physician can bill his or her full customary charge as an anesthesiologist. If a nurse anesthetist is employed by the hospital or is self-employed, computation of the anesthesiologist's customary charge is based on one-half time units. (Anesthesiologists bill using a "relative value guide" that combines time units with the relative difficulty and skill involved in procedures.)

The greatest changes in TEFRA regarding physicians apply to pathologists. The legislation defined almost all clinical laboratory tests as Part A services, and thus, not reimbursable on a charge basis. Under TEFRA's regulations, only clinical laboratory services meeting very specific criteria can be considered consultative services and reimbursable under Part B; all other clinical laboratory services are reimbursed by Part A. On the other hand, all anatomical pathology services are considered professional services and must be paid on a reasonable charge basis under Part B. Anatomical pathology generally requires examination of body tissue, fluid, or cells by the pathologist. Because anatomical pathology services and some clinical laboratory services, which had previously been combined billed to Part A, are now required to be billed to Part B, carriers have had to quickly establish customary charges using charges for similar services.

Teaching Physicians.—Like hospital-based physicians, teaching physicians provide services for the hospital itself (educational and supervisory services) in addition to supplying professional medical services to individual patients. Teaching physicians also tend to be salaried for at least part of their total compensation.

Since 1969, with the issuance of Intermediary Letter (IL) #372, Medicare has targeted teaching physicians for special treatment. IL #372 established criteria for identifying the personal, identifiable services that a teaching physician must perform for an individual patient to qualify for fee-for-service payment (6). In 1972, Section 227 of Public Law 92-603 mandated a legislative solution to paying teaching physicians, but was never implemented by regulation. Section 948 of the Omnibus Reconciliation Act of 1980 (Public Law 96-499) repealed Section 227 and essentially codified the requirements in IL #372 that define when a teaching physician may bill for professional services.

Section 948 also set forth the manner in which fee-for-service payments should be determined for physicians practicing primarily in teaching hospitals. It required that Medicare use the greater of the mean or modal charge collected from non-Medicare patients to determine payment for an individual service. In order to ensure a reasonable minimum for Medicare fees, the Deficit Reduction Act of 1984 amended the 1980 Onmibus Reconciliation Act and set the floor for Medicare fees in a teaching setting at 85 percent of the Medicare prevailing fee in the area.

HCFA has not yet published regulations to implement Section 948 of the Omnibus Reconciliation Act of 1980, although they are expected some time in 1985 (252). The Medicare program's only policy that is in effect is its administrative directive, IL #372, which stipulates the conditions for charge payment. There are no promulgated regulations on the level of payment for teaching physicians, and as a result, teaching physicians are today reimbursed by Medicare just like any other physicians.

Physician Services in Intermediate Care Facilities.—Under fee-for-service, Medicare limits physician payment for visits to beneficiaries in intermediate care facilities (nursing homes) with respect to multiple visits. This restriction was initiated in response to reported abuses early in the program (99). Except when more intensive care can be substantiated, Medicare pays only for one physician visit a month to the same patient in a nursing home, and there is a difference in payment level if more than one patient is visited. If the visit is a routine followup visit, it is paid at the level of a routine followup house call. If the physician visits more than one patient ("multiple visits") for routine followup visits, the payment level is lowered to that for a routine followup office visit. If the visit is brief, the Medicare payment may not exceed the payment for brief house calls for single patients and brief office visits for multiple patients (514). Multiple visit rates are 25 percent lower on average than single patient visits (318). Attempts by the Office of the Inspector General in the Department of Health and Human Services to extend the multiple visit limitation to physician visits in skilled nursing facilities[17] and hospitals (254) have been unsuccessful to date (99).

In addition to limiting payment, Medicare and Medicaid rules also require that patients in skilled nursing facilities be visited at least once every 30 days for the first 90 days following admission, after which the requirement is lowered to once every 60 days (42 CFR 405 1123(b)). Patients in intermediate care facilities must be visited every 60 days (42 CFR 442.346 (b)).

Other Payment Methods

Although fee-for-service is by far the method used to pay for the great majority of physicians' professional services under Medicare, the program has veered from traditional fee-for-service payment and used alternative payment methods for physicians' professional services to accommodate to special conditions. In certain circumstances, the program has paid an institution, either on a cost or capitation basis, and the institution subsequently has paid the physician a salary or negotiated a fee with the physician for the service or paid the physician per capita. The Medicare program has also paid the physician directly on a non-fee-for-service basis for some services and uses a statewide fee schedule to pay for certain physician provided clinical laboratory services.

Physician Services for Kidney Dialysis Patients.—Medicare uses alternative methods of fee-for-service in paying for some physician services provided to beneficiaries in the Medicare's ESRD program. Until August 1, 1983, physicians could choose from two methods of payment for maintenance dialysis, the principal service provided in the ESRD program. Under the "initial method," payment for physician services to patients undergoing maintenance dialysis was to the facility, and physicians negotiated a fee with the facility for their supervision or for routine services provided during a dialysis session (nonroutine services were paid according to reasonable charge criteria). Or, under the "alternative method," Medicare could pay a comprehensive monthly fee per patient. For patients dialyzed in facilities, the physician's fee was based on a calculation of the customary or prevailing charges for a followup visit, multiplied by 20. For supervision of home patients, the weighting factor was set at 14, to reflect the presumed lower requirements of home patients for physician supervision (405). The payment would be made by the carrier to the physician, if the physician accepted assignment, or to the patient, if the physician did not accept assignment (see discussion of assignment below).

In order to provide incentives to the use of home dialysis, the Omnibus Reconciliation Act of 1981 (Public Law 97-35) and subsequent regulations (48 FR 21254) eliminated the "initial method" and require that on and after August 1, 1983, physician services furnished to ambulatory maintenence dialysis patients in a freestanding facility or hospital-based facility or to patients undergoing dialysis at home be paid only under the alternative method. The calculation of the physicians' monthly payments is based on the number of typical dialysis sessions per month, prevailing charges for a medical specialist's brief followup visit for an established patient, and prevailing charges for an intermediate followup visit, weighted by the national averages of patients dialyzed in facilities and at home.[18] Upper and lower limits on the physicians' monthly capitation payments were established after adjustments for extreme ranges in prevailing charges. The minimum is set at $144 per month and the maximum at $220 per month for both physician services in the home and in facilities. HCFA's intention is not to automatically change the payment levels according to changes in prevailing charges but to review program data and change payment levels if warranted (48 FR 21254).

Physician Services for Clinical Laboratory Services.—Prior to July 1984, Medicare payments for clinical laboratory services furnished by a physician or an independent laboratory were made on a reasonable charge basis subject to the Part B deductible and coinsurance.[19] The method varied somewhat from Medicare's traditional CPR method of computing reasonable charges. The reasonable charge for ambulatory laboratory services was the lowest of the actual charge, the customary charge, the prevailing charge in the locality, and the lowest charge at which the test is widely and consistently available (which was established for 12 common laboratory tests).

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[17] A skilled nursing facility is a specially qualified facility which has the staff and equipment to provided skilled nursing care or rehabilitation services and other related health services. Medicare pays for care in skilled nursing facilities and for physician services provided in such facilities. Medicare, however, does not pay for care provided in nursing homes that are not specially qualified.

[18] Specifics of the calculation are in 48 FR 21269.

[19] A later section discusses Medicare's deductible and coinsurance under Part B.

Assignment was permitted on a case-by-case basis, and physicians could bill for laboratory services whether or not they performed or supervised the test.[20] When the physician's claim indicated that the test was performed in the office, Medicare would pay the physician as indicated above; when the physician's claim indicated that the test was performed by an outside laboratory, Medicare would pay the physician the laboratory's reasonable charge plus a $3 handling fee.

Before July 1984, Medicare payment for laboratory services ordered during hospital outpatient visits was on the basis of reasonable cost. Hospitals providing these services to their outpatients were required to accept assignment; hospitals providing these services to nonhospital patients receiving laboratory services from a hospital serving as an independent laboratory were not required to accept assignment and were paid on a reasonable charge basis.

The Deficit Reduction Act of 1984 established a different payment method—a carrier-based fee schedule—for clinical laboratory services conducted in physicians' offices, in independent laboratories, and in hospital laboratories acting as independent laboratories, i.e., furnishing tests to nonhospital patients. The fee schedule was established at 60 percent of the prevailing charge levels for the fee screen year beginning July 1, 1984. After 3 years, a national fee schedule will be formulated with methodology as yet undefined, to serve as the basis of payment.

The 1984 law also established a fee schedule for clinical laboratory services conducted by hospital laboratories serving hospital outpatients—the payment level to be set at 62 percent of prevailing charges. After 3 years payment will be on the basis of cost reimbursement unless Congress decides otherwise.

Other relevant provisions in the Deficit Reduction Act of 1984 include an annual adjustment of fee schedules to reflect changes in the consumer price index for all urban consumers (U.S. city average) and permission for the Secretary of Health and Human Services to adjust the fee schedules to reflect technological change, emergency services, and other special services.

Furthermore, the act also modifies current billing and assignment options. Physicians may bill for services only if the physician personally performs or supervises the test. Anyone who furnishes laboratory services may bill a nominal amount, currently $3 for the collection of the patient specimen; however, only one collection fee per patient encounter will be permitted. Physicians may continue to accept assignment on a bill-by-bill basis, but independent and hospital laboratories must accept assignment. For assigned claims, Medicare will reimburse at 100 percent of the fee schedule and waive coinsurance and the deductible for all assigned tests. Physicians can accept assignment on the laboratory portion of a claim only and not accept assignment for other services.

Physician Services and Health Maintenance Organizations (HMOs).—Medicare does not pay physicians directly for their services provided in HMO settings, but contracts with HMOs for physician and other services. The original Medicare legislation authorized payment on the basis of the costs to the organization for providing the specific services to beneficiaries. The Social Security Amendments of 1972 added the option of paying HMOs on a risk-sharing basis for services covered under both Part A and Part B to the existing method of reimbursement on a reasonable cost basis. Under the risk-sharing method, a per capita reimbursement rate that reflects the estimated costs to an HMO for its enrolled Medicare population is compared at the end of the year to the actuarial measure of the costs that would have been incurred by Medicare to serve comparable beneficiaries within the HMO's service area on a fee-for-service basis (the average adjusted per capita cost or AAPCC). If the HMO's costs are less than the AAPCC, the HMO is reimbursed for costs and receives one-half of the excess of the AAPCC over its costs, up to a maximum of 10 percent of the AAPCC. If the HMO's costs are greater than the AAPCC, the HMO has to absorb the entire loss.

Both the risk and reasonable cost reimbursement methods required retrospective determination of costs, which is an awkward arrangement for HMOs, which are designed to operate under prospective budgets without extensive reporting requirements to third-party payers. Furthermore under the risk-sharing method, although the HMO might have to absorb all losses, it can share in only half of any surpluses. This lack of a strong incentive resulted in only one HMO's entering into a risk-sharing contract with Medicare. As of June 1984, 62 HMOs were reimbursed on a cost basis and an additional 26 were reimbursed on a risk basis under various HCFA demonstration projects. Forty-four other health care prepayment plans had contracts with HCFA on a cost basis for Part B services only (50 FR 1341).

In 1982, the Tax Equity and Fiscal Responsibility Act or TEFRA changed the way organizations are reimbursed on a risk basis to permit prepaid capitation payment without retroactive adjustments. The regulations, which became effective February 1, 1985, provide for monthly per capita payments equal to 95 percent of the AAPCC, as adjusted for geographic area and variations within the enrolled Medicare population—age, sex, disability status, welfare status, institutional status, and other relevant factors (50 FR 1369). The organization is also required to compute an "adjusted community rate"—a rate equal to the premium the organization would charge its non-Medicare enrollees for the Medicare covered services adjusted to reflect the utilization characteristics of the organization's Medicare enrollees. If the organization's adjusted community rate is less than the capitation payment rate, the HMO may keep the entire surplus, but must use it either for providing beneficiaries with additional benefits beyond those required by Parts A and B of Medicare or for reducing premium rates. The HMO may also put some of the surplus into a benefit stabilization fund or return it to HCFA (see ch. 7). If the adjusted community rate exceeds 95 percent of the AAPCC, the organization may elect to be reimbursed on a reasonable cost basis as in the past.

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[20] A detailed description of assignment under Medicare is in a subsequent section of this appendix.

TEFRA also expands the definition of organizations eligible to contract with HCFA for Medicare payment to other medical delivery systems, termed competitive medical plans, that do not meet the restrictive definition of federally qualified HMOs in the Public Health Service Act. Like HMOs, competitive medical plans are required to enroll members on a prepaid capitation basis and assume full financial risk for the full scope of Part A and Part B Medicare benefits. HMOs that have federally qualified must meet other structural regulations and are required to community rate, rather than experience rate, their premiums for their private lines of business (see ch. 7).

Physicians' Acceptance of Medicare Payment

Physicians receive Medicare payment for each claim for their services on an assigned or nonassigned basis. When a physician accepts assignment, the physician agrees to accept Medicare's reasonable charge determination as full payment. The physician bills the program directly and, after the deductible is satisfied, is paid an amount equal to Medicare's reasonable charge less the 20-percent coinsurance, which is the patient's share of the bill. If the patient has not had bills sufficient to meet the annual deductible, the patient is also obligated to pay the physician the deductible amount not met.[21]

When a physician does not accept assignment, the physician bills the beneficiary and the beneficiary requests reimbursement from Medicare. If Medicare's reasonable charge is lower than the physician's actual charge, the beneficiary is responsible for paying the difference between the two charges in addition to the amount of the coinsurance after the beneficiary has satisfied the deductible. The physician's actual charge is included in the calculation of the customary charge and the prevailing charge for the next fee screen period irrespective of his or her assignment status.

The nationwide net assignment rate of claims declined from a high of 61.5 percent in 1969 to a low of 50.5 percent in 1976 and 1977, and rose to 59 percent of claims and 59.6 percent of charges in 1984 (518). Voluntary assignment is lower than the above rates indicate, since joint Medicare-Medicaid claims are factored into the calculations and assignment is mandatory for Medicaid beneficiaries. The number of the noninstitutionalized dually entitled people, i.e., those eligible for both Medicare and for Medicaid, is estimated at over 3 million or about 15 percent of persons over age 65 (295). However, the exact number of Medicaid beneficiaries who are enrolled in Part B of Medicare is unknown due to insufficient data about the institutionalized elderly and "buy-ins," i.e., beneficiaries for whom States pay the Part B premium. Based on estimates of the dually entitled, voluntary assignment rates appear to average about 11 percent less than indicated by the aggregate statistics (496). Specific estimates of the voluntary assignment rate ranged from 35 (1) to 40 percent in 1982 (486) to 42 to 43 percent in 1982 (174a).

The assignment rate varies according to a number of factors, including the following:

1. *Physician.*—Selected physician reimbursement data from Medicare and Medicaid programs in the 1970s indicate that 28 to 30 percent of physicians never accept assignment, 18 to 19 percent always accept assignment, and 52 to 53 percent make their decisions on a case-by-case basis (71,315). Later data from the American Medical Association show that in 1984 83.9 percent of all non-Federal patient care physicians who treated some Medicare patients sometimes accepted assignment. Slightly over 16 percent did not accept assignment for any patient and 32.1 percent accepted assignment for all of their patients (15).
2. *Beneficiary.*—Physicians are more likely to accept assignment for disabled Medicare beneficiaries than for elderly beneficiaries and for the older Medicare population than for the younger elderly (494).
3. *Geography.*—The region and, even more so, the State are factors in accepting assignment. In calendar year 1982 assignment rates ranged from 82.9 percent in Rhode Island to 19.4 percent in Wyoming (494). The geographical variation has been ascribed to historical precedent, physician preference, and administrative practices of individual carriers (496).

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[21] The following section on beneficiary financial liability discusses deductibles and coinsurance in detail.

4. *Medical specialty.*—The highest assignment rates (about 60 percent) are in the hospital-based specialties of pathology and radiology (297). Among office-based physicians, general surgeons had the highest and otolaryngologists and ophthamologists had the lowest assignment rates (138).
5. *Size of bill.*—Physicians tend to accept assignment more often on bills of $100 to $200 than on bills lower than $100 or higher than $200 (297,494).
6. *Payment level.*—Assignment rates increase with an increase in Medicare reimbursement rates, and decrease with a decrease in reimbursement rates (188,315,357,394).

A recent, fundamental addition to the assignment process is the establishment of a participating physician program on July 18, 1984, as mandated by the Deficit Reduction Act of 1984. The acceptance of assignment on a bill-by-bill basis still pertains for those physicians who decide not to become participating physicians. However, those physicians who have become participating physicians have voluntarily entered into an agreement to accept assignment for all services provided to Medicare patients for 12-month periods beginning on October 1st of each year (516).

There are a number of incentives in the legislation to encourage participation: the major incentive is that participating physicians are exempt from a limitation on future physician charge increases. The statute, as noted earlier, freezes Medicare customary and prevailing charge levels for the services of physicians from July 1, 1984, through September 30, 1985. The law prohibits nonparticipating physicians from raising their actual charges to Medicare patients during the 15-month freeze period and stipulates that Medicare will not recognize any increases in charges during the fee freeze period in calculating customary charges on October 1, 1985, and October 1, 1986. In addition, if nonparticipating physicians increase their actual charges billed to Medicare beneficiaries, they can be excluded from the Medicare program for up to 5 years or be subject to civil monetary penalties.

Participating physicians are exempt from some of these limitations. Although no increases in Medicare payment are permitted from July 1, 1984, to September 30, 1985, participating physicians who increase billed charges during the 15-month freeze were to have the increase recognized in the customary charge updates on October 1, 1985, and October 1, 1986.[22] Other incentives for participating physicians include listings in directories made available to beneficiaries, toll-free carrier telephone services, and electronic transmission of claims.

January 1985 data show that almost one-third (29.8 percent) of all physicians billing Medicare have chosen to become participating physicians (516). The level of participation varies by specialty and State. As can be seen in table C-2, "other" surgical specialists, anesthesiologists and otolaryngologists have the lowest percentage of participation; and nephrologists, radiologists, and pathologists have the highest percentage of participation. Among the States, physicians and suppliers who practice in South Dakota, Alaska, and North Dakota have the lowest percentage of participation; and physicians who practice in Alabama, Kansas, and the District of Columbia have the highest percentage of participation (516).

More recent data indicates that 30.4 percent of all physicians billing Medicare were participating physicians in fiscal year 1985 and 28.4 percent are expected to participate in fiscal year 1986.

The assignment rate for all physicians, participating and nonparticipating, in January 1985 had increased to 66.5 percent, a considerable increase over the fiscal year 1984 rate of 56.4 percent (352). The 66.5 percent assignment rate includes mandatory assigned claims by clinical laboratories, as indicated earlier, as well as physicians who have accepted assignment on a claim-by-claim basis, and physicians who have accepted assignment for all services to Medicare beneficiaries. The assignment rate for fiscal year 1985 for all physicians has increased to 67.7 percent (521a).

Beneficiary Payment Liability

Eligible individuals must pay monthly premiums for coverage of physician and other services under Part B and are subject to a deductible and coinsurance for covered services used. If a physician does not accept assignment, the Medicare patient is also liable for the difference between the amount the physician bills and the amount Medicare allows for the service. Services that are not covered for payment by Medicare are the complete financial responsibility of the beneficiary.

Beneficiaries' participation in Part B of the Medicare program begins with a fixed monthly premium, which has been rising gradually from $9.60 in fiscal year 1980 to $15.50 on January 1, 1985, a 60-percent increase (see table C-3) (523). The annual out-of-pocket premium payment by the elderly for Part B coverage increased 138 percent from 1977 ($78) to 1985 ($186).

At the outset of the program, premiums contributed half of Part B revenues, while general revenues subsidized the other half. Subsequent amendments limited Part B premium increases to no more than the percent-

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[22] As noted earlier, the Administration's budget proposal for 1986 includes extending the phyician fee freeze for an additional 12 months and delay up dating of participating physicians payments by 1 year.

Table C-2.—Medicare Participating Physicians and Suppliers

Specialty	Number of participants	Percentage of all physicians/ suppliers
Physicians (M.D.s and D.O.s):		
General practice	13,743	27.3%
General surgery	9,491	33.9
Otology, laryngology, rhinology	1,741	24.6
Anesthesiology	3,269	21.1
Cardiovascular disease	3,820	35.6
Dermatology	2,089	34.0
Family practice	8,820	25.5
Internal medicine	21,067	32.5
Neurology	2,543	34.8
Obstetrics-gynecology	4,220	27.3
Ophthalmology	4,220	27.3
Orthopedic surgery	4,096	29.0
Pathology	2,263	39.6
Psychiatry	6,871	30.0
Radiology	6,658	41.3
Urology	2,381	27.8
Nephrology	944	50.8
Clinic or other group practice—not GPPP	6,795	33.8
Other medical specialties	6,515	32.4
Other surgical specialties	4,398	18.2
Limited license practitioners:		
Chiropractor	6,217	25.4%
Podiatry—surgical chiropody	4,541	38.2
Optometrist	4,541	38.2
Other limited license practitioners (audiologists, psychologists, physical therapists)	2,845	36.8
Independent laboratory	1,698	28.4
Durable medical equipment suppliers	5,018	22.7
Ambulance service suppliers	2,551	28.6
Miscellaneous suppliers (orthotists, prosthetists, portable X-ray suppliers)	8,555	22.5
Grand total	156,001	29.4%
Total physicians	118,428	29.8
Total limited license practitioners	19,751	34.0
Total suppliers	17,822	23.8

SOURCE: U.S. Department of Health and Human Services, Health Care Financing Administration, *HCFA Fact Sheet*, January 1985.

Table C-3.—Monthly Beneficiary Premium for Medicare Part B Coverage

Period	Premium	Inflation adjusted premium (1980 = 100)[a]	Annual increase above inflation (percent change)
Fiscal year 1980	$ 9.60	$ 9.60	NA
Fiscal year 1981	11.00	9.98	3.96
Fiscal year 1982	12.20	10.44	4.61
Fiscal year 1983	13.50	11.22	7.47
Calendar year 1984	14.60	11.72	4.46
Calendar year 1985	15.50	—	—

[a] Premium deflated by Consumer Price Index for Urban Wage Earners and Clerical Workers for the calendar year, as published in U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review*, September 1985.

SOURCES: U.S. Department of Health and Human Services, Health Care Financing Administration, *Medicare Program Statistics 1981* (Washington, DC: U.S. Government Printing Office, 1983); and 49 FR 38511.

age increase in Social Security cash benefits. As a result by 1978, the percentage contribution of premiums to Part B costs had dropped below 25 percent (164).

The Tax Equity and Fiscal Responsiblity Act of 1982 and the Social Security Amendments of 1983 (Public Law 98-21) temporarily suspended the limitation and increased Part B basic premiums as of calendar year 1984 to a level that results in premium revenues equal to 25 percent of program costs. The Deficit Reduction Act of 1984 extended the requirement that the Part B premium produce income equal to 25 percent of program costs through 1987, with the constraint that the increase in the Part B premium may not exceed the dollar amount of the Social Security cost-of-living adjustment (49 FR 38510).

Almost 80 percent of Medicare enrollees 65 years of age and over used physician services in 1982 and 60 percent of Medicare enrollees met the initial deductible (495). In any year, the beneficiary has to incur an initial expense—a deductible—before Medicare will pay for Part B services. In 1982, the deductible was raised from the first $60 to the first $75 of approved charges in a calendar year. Coinsurance is applied each time physician and other Part B services are used and is 20 percent of the remainder of approved charges after the deductible is satisfied. The deductible and coinsurance per enrollee for 1984 was estimated to average at $236, which is an increase of 143 percent from 1977, when they were $97 (see table C-4).

Beneficiaries also incur costs when physicians do not accept assignment, since the beneficiary is liable for any difference between the physician's billed charge and Medicare's payment for the service (reasonable charge reduction on unassigned claims). HCFA esti-

Table C-4.—Medicare Supplementary Insurance: Estimated Total and Per Enrollee Cost-Sharing for the Aged, 1977-84[a]

	Total in millions					Per enrollee[b]					
Year	Deductible	Coinsurance	Total copayments	Potential liability from unassigned claims[c]	Total cost-sharing	Deductible	Coinsurance	Total copayments	Annual SMI premium	Total cost-sharing	Potential liability from unassigned claims[c]
1977	$ 969	$1,244	$2,213	$ 804	$3,017	$42	$ 54	$ 97	$ 89.40	$186.40	$32
1978	1,011	1,454	2,465	912	3,377	43	62	105	95.40	200.40	35
1979	1,055	1,736	2,791	1,158	3,949	44	72	116	96.65	212.65	43
1980	1,103	2,112	3,215	1,538	4,753	45	86	131	101.40	232.40	56
1981	1,148	2,576	3,724	1,873	5,597	46	103	148	123.60	271.60	67
1982	1,525	3,235	4,760	2,281	7,041	60	126	186	139.20	325.20	80
1983	1,571	3,967	5,538	NA	NA	60	152	212	146.40	358.40	NA
1984[d]	1,616	4,678	6,294	NA	NA	61	175	236	175.20	411.20	NA

NA = Data not available.

[a] January 1984 current law estimates of copayment amounts based on incurred charges. Data are subject to revision.

[b] Average annual enrollment is used to calculate these items.

[c] Includes both aged and disabled beneficiaries. "Potential liability" refers to the fact that physicians who do not accept assignment are free to pursue payment of their billed charges in excess of the Medicare approved charges from the beneficiary, but it is not known how many actually do so.

[d] Projected.

SOURCE: D.R. Waldo, and H.C. Lazenby, "Demographic Characteristics and Health Care Use and Expenditures by the Aged in the United States: 1977-84," *Health Care Financing Review* 6(1):1-29, Fall 1984. U.S. Department of Health and Human Services, Social Security Administration, *Social Security Bulletin*, Annual Statistical Supplement, 1982, Table 145 (Washington, DC: 1984).

mates that the reasonable charge reduction on unassigned claims has increased from $31 per enrollee in 1977 to $85 per enrollee in 1983 (a 214-percent increase) (563).

Of the per capita expenditures on physician services by the aged projected for 1984, the Medicare program is expected to spend 58 percent. The beneficiary out-of-pocket component, when defined as the deductible, coinsurance, and reasonable charge reduction, was estimated to be 26.1 percent of the per capita expenditure in 1984 (563). When the Medicare premium and the payments to the deductible made by Medicare beneficiaries who do not meet the deductible are included, Medicare beneficiaries are estimated as paying 60 percent of the cost of physician services under Part B (8).

Most of the elderly participants in Part B have some form of supplemental "Medigap" private insurance.[23] By 1977, approximately 66 percent of the elderly population had some type of private health insurance to supplement their Medicare benefits (558). Private insurers annually paid $117 in 1984 ($48 in 1977) for physician services for elderly Medicare beneficiaries (563). Most policies are supplementary to Medicare coverage and limited to paying for deductibles and coinsurance ("Medigap"), although there are other forms of "Medigap" insurance that are more comprehensive. To the extent that beneficiary unassigned liability is actually collected, the payment of deductibles and coinsurance by Medigap tends to dilute control of beneficiary use of Part B services through cost-sharing.

Medicaid Payment for Physicians' Services

The Medicaid program was authorized in 1966 under Title XIX of the Social Security Act as a social welfare program to provide medical assistance to certain categories of low-income people, including the elderly, the blind, the disabled, and members of families with dependent children (the categorically needy). Medicaid is a joint Federal-State program that is administered by individual States under general Federal guidelines that include minimum benefits that must be available to eligible recipients and optional benefits that individual States may elect for their recipients.

Both the individual States and the Federal Government provide program funds; the Federal Government contributes "matching funds" for the categorically needy, and, if the State chooses, for the medically indigent.[24] The Federal Government's current contribution to Medicaid payment is estimated at an average of 53 percent with a range from 50 to 78 percent among the States (236,563).

State Medicaid programs have considerable discretion in the method to determine payment levels and can use adaptations of either the maximum fee screen method (CPR) or fee schedules. In early 1982, 25 Medicaid programs used various adaptations of the CPR method, 12 of which reimbursed at below Medicare's 75th percentile of prevailing charges (255). The States vary in how often they update prevailing charges, the data sources they use to establish physician profiles, and the percentile at which they set the prevailing charge (214). For example, Medi-Cal (the California Medicaid program) at one time defined the prevailing charge as the 60th percentile in contrast with the 75th percentile then used in the Medicare program (430). State Medicaid programs are required to use the MEI as a screen to limit the rate of increase in prevailing charges (214).

In 1982, 24 States reported using a fee schedule (255). Some States derive their fee schedule from Medicare or private insurance payment levels and adjust the schedule over time. Others base the fee schedule on a relative value scale and a conversion factor of their choosing (214). Two States reported using this methodology in 1982 (255).

Although in 1979, almost an equal number of States based payment levels on fee schedules as those that used the CPR methodology, 7 of the Nation's 10 largest Medicaid programs used fee schedules, and States with fee schedules accounted for 68 percent of all Medicaid expenditures. States that employed fee schedules increased their fees much less frequently than States that used the CPR methodology to establish payment levels (214).

The fee levels in the Medicaid program average only 72 percent of Medicare levels and are as low as 49 percent in some States (204). The State Medicaid programs vary widely in payment levels. When an adjusted weighted average fee for each State adjusted for the cost of living is used, statewide fee indices that aggregated fees across 41 procedures varied from $108.04 for Nevada to $21.68 for Pennsylvania (214). The Medicaid programs also vary according to medical specialty and geographic area (214). For example, payment for an appendectomy performed by a general practitioner ranged from a low of $100 in Pennsylvania to $512.89 in Nevada (255).

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[23] For a comprehensive discussion of supplementary medical insurance, see app. F of the October 1982 OTA report *Medical Technology Under Proposals To Increase Competition in Health Care* (483).

[24] The medically indigent are individuals who meet categorical requirements for Aid to Families with Dependent Children and Aid to the Aged, Blind, and Disabled, but have incomes that a State considers too high to be eligible for cash assistance, but not sufficiently high to pay medical bills.

Physicians who provide medical care to Medicaid recipients cannot bill recipients, but must accept Medicaid payment as payment in full (236). Medicaid recipients in States with low Medicaid payment levels and low rates of physician participation are more likely to receive care in hospital outpatient departments and clinics, which are usually more expensive than physician's offices (170).

Physician fee freezes are utilized by many State Medicaid programs to control program costs. As of July 1984, 17 States had frozen physician fees for 1985 at the allowable rates established for 1984 or an earlier year (214). Some State programs have frozen fees for many years. For example, except for certain procedures, Florida has not increased physician fees since 1983, Michigan since 1977, and Ohio since 1972. Louisiana has frozen fees for 2 years and intends to initiate a flat fee system. Although New York State has frozen physician fees, there is legislation pending to increase physician fees for primary care services (214).

In addition to fee-for-service physician payment, State Medicaid programs also have the authority to contract with federally qualified HMOs and with comprehensive medical plans. However, the influence of HMOs has been small; as of September 30, 1984, there were only 65 HMO Medicaid contracts in 21 States (229). Until recently, payment to the HMOs was on a capitation basis only[25] and no more than 50 percent of the enrollees in a contracting HMO could be Medicaid or Medicare beneficiaries.[26] The Omnibus Reconciliation Act of 1981 increased the maximum proportion of Medicare and Medicaid beneficiaries to 75 percent, with provisions for a waiver in special circumstances. Furthermore, regulatory reform efforts have relaxed regulations governing Medicaid reimbursement to HMOs and established procedures for States to contract with HMOs for services provided to Medicaid beneficiaries on a cost[27] as well as on a capitation basis.

Until October 1, 1982, when the Arizona Health Care Cost Containment System (AHCCCS) became operational, Arizona was the only State without a Medicaid program. The purpose of AHCCCS is to develop and test an alternative payment and delivery system that is based on capitation, competition among providers, and a network concept of primary care. AHCCCS contracts with both the public sector (county government) and with the private sector (including individual practice associations (IPAs) and other HMOs) to provide basic health services to individuals in the Aid to Families with Dependent Children program, individuals on Supplementary Security Income, and single individuals with less than $3,200 annual income (238). The program appears to be encountering problems with respect to costs, the providers' financial performance, and quality of care, and HCFA is imposing tighter controls on its operation (198).

The Arizona experiment illustrates some of the changes taking place in the payment and delivery philosophy of the Medicaid program. As described above, the Medicaid program historically has paid physicians on a fee-for-service basis with care delivered by the private delivery system. Beneficiaries have had little or no cost-sharing requirements and were allowed free choice of providers. In the last few years, States, with support from the Federal Government, have turned to systems of case management combined with payment on a capitation basis, restrictions on physician choice, and beneficiary cost-sharing in attempts to contain costs (235).

The Omnibus Reconciliation Act of 1981 wrought a major change in State Medicaid programs by modifying Medicaid's long-standing provisions that gave recipients the freedom to obtain services from any provider. As of June 1984, 24 States had restricted recipients' access to all providers by limiting freedom of choice, by requiring recipients to obtain services from a primary care provider or "gatekeeper," or by requiring recipients to receive care only from providers with whom the State had contracts (214). Six of the State programs are in the demonstration or pilot stage. Of the 14 States that will reimburse only those providers with whom the State has a contract, 3 States have limited the provision to selected services, and 1 State has applied the provision only to 6,000 Medicaid recipients enrolled in HMOs (214).

Other changes from traditional Medicaid payment procedures include capitation programs and recipient cost-sharing.[28] Twelve States now have provisions for paying physicians on a capitation basis rather than traditional fee-for-service; four of the States have demonstration capitation programs. And, as of July 1984, 25 States collected a copayment or deductible from Medicaid recipients for selected services that vary from State to State. States have also provided medical care for some recipients by enrolling them in HMOs; 23

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[25] Although the Social Security Act did not expressly forbid reimbursement arrangements from being on a cost basis, regulations governing Medicaid payment to HMOs (42 CFR 431.524) required that all such contracts be on a risk basis.

[26] Social Security Act, Section 1903(m).

[27] 48 FR 54013, final rule establishing new Section 42 CFR 434.

[28] The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) altered Medicaid cost-sharing requirements so that States now have the option to require copayment, coinsurance, or deductibles for almost all services to both the categorically needy and the medically needy with certain exceptions, such as categorically needy who are enrolled in an HMO. The regulations also state that no provider participating in the Medicaid program may deny care or services to individuals because of their inability to pay the cost-sharing charges.

States had exercised this option for some of their recipients as of July 1984 (214).

Conclusion

Medicare's payment method for physician services can be characterized as a predominantly fee-for-service system, which, in comparison with Medicaid and private health insurance, has remained relatively unaltered in the past 20 years. Until July of 1984, when a temporary freeze on physician fees went into effect, Medicare's major efforts to control physician payment were to reduce the level of prevailings, to delay the updating of physician fees, and to apply the MEI (which became effective in 1976).

The prescribed method for computing physician payment based on reasonable charges as determined by the CPR method is extremely variable among Medicare carriers because of the decentralized mechanism established in law and regulations. The variation extends to the delineation of charge areas and the specification of prevailing charges depending on medical specialty.

The Medicare program has been flexible in its payment method on a national level. The program has adapted CPR for special conditions, e.g., paying hospital-based physicians. Morever, Medicare has veered from the traditional fee-for-service method, and for some special services (maintenance kidney dialysis and ambulatory laboratory services) has paid physicians on other bases. Medicare has also contracted with HMOs on a cost or capitation basis for physician and other services.

Physician financial involvement in Medicare is influenced by payment practices. The data on physician participation indicate that the number of physicians accepting assignment on a claim-by-claim basis is rising slowly, with extreme variation among medical specialists and among States. Similar variation exists among physicians who have become "participating physicians" in Medicare, i.e., they have agreed to accept assignment for all services provided to Medicare beneficiaries.

Over the years beneficiaries' financial liability for physician charges has increased. As a result many elderly Medicare beneficiaries have purchased supplemental medical insurance (Medigap).

The other major Federal third-party payment system, Medicaid, differs from Medicare with respect to physician payment historically in having used two ways of setting payment levels, CPR and fee schedules. Almost an equal number of States use each method. Typically, Medicaid pays physicians at a lower rate than Medicare. Another difference is that in the past few years, States, with support from the Federal Government, have used innovative ways of paying physicians and organizing the delivery of medical care. Many States are using systems of case management and retrictions on physician choice as cost-control methods.

Appendix D

Private Sector Approaches to Physician Payment

Introduction

Much attention has been drawn to the problems of the Medicare program in maintaining the viability of a medical insurance system for elderly and disabled beneficiaries in the face of rising medical costs. It is important to recognize, however, that rising costs of medical care do not affect Medicare alone. In 1983, private payers for health care services in the United States spent $206.6 billion, or 58.1 percent of the national total of $355.4 billion. Private expenditures grew at an average annual rate of 13.6 percent from 1979 to 1983. Private expenditures for physician services totaled $49.7 billion in 1983, and were projected to increase to $60.4 billion in 1985 and to $88.0 billion in 1990 (21).

Many of those private payments are made by third-party payers in the form of health insurance benefits provided to employee groups. In 1979, 73.3 percent of the population had some form of private insurance coverage, and 60.6 percent of the population was covered under employer group contracts (83). In 1983, an average of $2,100 to $2,400 was spent by medium and large employers on each employee's health care (448). The sources for health insurance coverage in the United States have been commercial insurance companies, hospital and medical service plans (e.g., Blue Cross and Blue Shield), prepayment group medical plans, such as health maintenance organizations (HMOs), and others, such as employers or labor unions (201).

In addition to employee groups, an important part of the market for some insurers is "Medigap" insurance.[1] Corporate payers of health care benefits have a stake in controlling the costs of care for the Medicare population, since 58.4 percent of medium and large employers in 1980 maintained health benefit plans for retired employees over age 65 (83).

Although Medicare was designed around the model of private health insurance (287), from its inception, Medicare has differed from private third-party payers in the specifics of its benefits, coverage, payment, and other policies. Furthermore, although Medicare policies are determined by laws and regulations, practices of private health insurers have been developed in response to market demand from purchaser groups, by Federal laws such as the Employee Retirement Income Security Act of 1974 (Public Law 93-406), and by State laws and regulations (329). In addition, corporate payers of health benefits plans have increasingly turned to self-insurance, or self-funding of benefits, in order to have greater control over the outlays for their employees' benefits. Thus, differences between private insurers' methods of physician payment provide another base of experience for Medicare to examine in considering alternatives for physician payment. The first part of this appendix discusses the range of alternatives in private health insurance.

In addition, the recent outcry from corporate payers of health care benefits for controls on health care costs have caused the private sector health insurance industry to respond with many innovations in the provision of benefits and health care services. Although many of these innovations are too recent to have been evaluated for their effectiveness in controlling costs, the private sector may be gaining experience in identifying cost-effective practices and developing methods for rationalizing the provision of health services that may be worthwhile for Medicare to examine. The second part of this appendix discusses these innovations in the private sector.

The Private Insurance Market

Framework

Like Medicare, private health insurance groups the benefits for which it will pay into broad categories. As is illustrated in figure D-1, in addition to the extent of benefit coverage in an insurance plan and the method of determining payment level, the insurance organization's theoretical approach to health insurance is a dimension of payment. Private insurers also make decisions on a claim-by-claim basis for those services, usually new technologies, not explicitly covered or excluded under the terms of the insurance policy.

Approaches to Insurance.—Indemnity insurance and service plans represent the two theoretical traditional approaches to health benefit coverage. Indemnity insurance guarantees the enrollee a fixed amount for a specific service (95,445). The enrollee pays the physician the physician's billed amount for the service, which may be more than the insurer's guaranteed amount (430), and collects payment from the insurer (439). In contrast, service plans assure their members

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[1] "Medigap" is described in app. C.

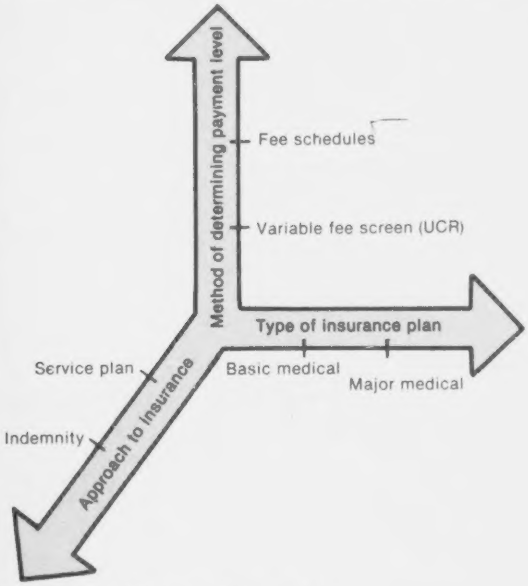

Figure D-1.—Dimensions of Payment for Physicians' Services in Private Health Insurance (Fee for Service)

SOURCE: Office of Technology Assessment, 1985.

specific units of service, for example a day of hospital care, for a regular premium in prepayment of those services (95,445). A physician, if a participating provider, contracts with the plan to accept the plan's allowance as full compensation for his or her services (430), and collects payment from the plan (439). However, the theoretical approaches have become entwined; many service plans incorporate some indemnity features, and some indemnity plans have some service plan features (22).

Methods of Determining Payment Levels.—Both the indemnity approach and service approach use fee schedules and variable fee screens (usual, customary, and reasonable or UCR) in determining payment levels (95,122). In practice, fee schedules are most common in indemnity policies (325), while the UCR method is most often used to determine payment levels in service plans.

Types of Insurance.—In contrast to Medicare, benefits of private health insurance are covered for payment under two principal types of insurance: 1) basic medical expense insurance, and 2) major medical expense insurance. Basic medical expense insurance is further divided into hospital expense insurance, surgical expense insurance, and medical expense insurance. Hospital expense insurance usually includes coverage for hospital room and board and nearly all services provided by a hospital, other than personal convenience items and most physician fees. Surgical expense insurance typically covers the expenses of surgeons and related professional services. Regular medical expense insurance covers physician's nonsurgical services in a hospital, at home, or in the office, and sometimes covers diagnostic services (587).

Major medical expense insurance applies broadly to almost all kinds of medical care. Major medical expense insurance is sold either as a distinct policy to supplement existing basic coverage, or it provides coverage for all medical expenses (subject to deductibles and coinsurance) in a single unit. This type of insurance, called comprehensive coverage, provides extensive benefits, including coverage for most health care services prescribed by a physician in or out of a hospital (587).

Benefits and Coverage.—The specific benefits, the exclusions, and the extent of financial coverage vary from one insurer to another and from policy to policy within each of the organizations. Nonetheless, in general there are some benefits that differ markedly from those offered under Medicare. Dental care, vision and hearing care, outpatient prescription drugs and, more rarely, physical examinations are covered under some private health insurance policies purchased through employer groups (201,203,575). Some major medical policies also offer a relatively high level of protection against catastrophic expenses. Furthermore, although less extensive than other services, coverage for inpatient and ambulatory psychiatric services is considerably greater than that offered under Medicare (414). As can be seen in table D-1, the percent of coverage differed for each category of benefit.

A constraint on the benefits offered by private insurance plans is State and Federal laws and regulations which mandate particular types of coverage. Until recently, it had been believed that the Employee Retirement Income Security Act of 1974 and the National Labor Relations Act preempted State laws regulating the content of insurance policies for employees. On June 3, 1985, however, the U.S. Supreme Court upheld a Massachusetts statute mandating certain types of mental health benefits in employee health benefit plans, thus opening the way for States to regulate the content of employee health plans. This ruling is causing concern to nationwide corporations, who believe that the costs of their plans will rise if they are required to meet differing benefits requirements in all of the jurisdictions in which they operate (35,329).

Physician Payment in Private Insurance Plans

Private health insurance varies from Medicare in relying on both benefit schedules (fee schedules) and variable fee screens in determining payment levels for

Table D-1.—Group Coverage of Selected Categories of Health Care

Category of health care	Percent with benefit Wilensky, et al.[a]	Hedger and Schmitt[b]	HIAA[c]
Ambulatory prescription drugs	88.0%	97.5%	75.0%
Dental care	28.3	74.6	46.0
Vision or hearing care	11.7		
Vision care		28.0	16.0
Ambulatory psychiatric care	77.0		93.0
Mental health care		98.7	
Physical exam	6.3		5.2

[a] Percentage of civilian noninstitutionalized individuals with group coverage (N = 13,916); Data from National Medical Care Expenditure Survey (1977).

[b] Percentage of 116 health insurance plans that covered 5 million employees in 1979. Survey performed in 1981.

[c] Percentage of 36 employee health insurance plans with 21.8 million employees. Survey performed in 1981 by the Health Insurance Association of America (HIAA).

SOURCE: G.R. Wilensky, P.J. Farley, and A.K. Taylor, "Variations in Health Insurance Coverage: Benefits vs. Premiums," *Milbank Mem. Fund Q.* 62(1):53-81, Winter 1984; D. Hedger and D. Schmitt, "Trends in Major Medical Coverage During a Period of Rising Costs," *Monthly Labor Review* 106(7):11-16, July 1983; and Health Insurance Association of America, *A Profile of Group Medical Insurance in the United States* (Washington, DC: HIAA, no date).

their fee-for-service business. Furthermore, as is described below, the variable fee screen method is similar, but not identical, to the method used by Medicare.

Fee Screens.—For major medical policies most private insurance companies and health benefit plans use variable fee screens in determining physician payment levels. The amount allowed by a plan or company for a given service is known as the reasonable charge and depends on a fee screen determination of the physician's usual charge and the local customary charge (UCR). In private insurance terminology, the Level 1 fee screen, the physician's usual charge, is comparable to Medicare's customary charge (583). The so-called customary charge, comparable to Medicare's prevailing charge, is the Level 2 fee screen.

The Level 2 (customary) fee screen in private health insurance is generally set at the 80th to 90th percentile, that is, the charge level at or below which 80 to 90 percent of the billed charges occur. Medicare, by contrast, is legally limited to the 75th percentile for its Level 2 (prevailing) fee screen (Section 1842(b)(3), Soc. Sec. Act). The reasonable charge is generally the lowest of the usual charge (Level 1 screen) or the customary charge (Level 2 screen), both of which are generally calculated from the physician's charge pattern over the previous year (430). In special circumstances, such as an unusually complex treatment, the reasonable fee may be the physician's actual charge, even though it exceeds the fee screens (324).

Fee Schedules.—Most private health insurance companies and health benefit plans use benefit schedules (i.e., fee schedules) for determining physician payment for their basic medical expense policies (430). The insurer generally pays the lesser of the listed amount for a service or the actual charge by the physician, irrespective of medical specialty or geographic location (430). If the physician's actual charge is higher than the listed amount, the patient is responsible for the additional payment for the service. Maximum benefit schedules can be set by negotiation[2] or according to actuarial calculations.

Blue Cross and Blue Shield Plans.—Individual Blue Cross and Blue Shield plans are members of the Blue Cross and Blue Shield Association, which was formed in 1982 when the Blue Shield Association and the Blue Cross Association merged. All plans are not-for-profit organizations organized under State insurance laws or under special enabling legislation. Blue Cross plans originally covered primarily hospital expenses, but enlarged their scope of coverage to include ambulatory care, other institutional services, and home health care.

The Blue Shield plans were founded to cover physician services, but many have expanded their coverage to include other benefits, such as dental services, vision services, and ambulatory services.

As of September 1985, there were 67 Blue Shield Plans and 68 Blue Cross Plans, of which 40 are joint plans, making a total of 89 corporations (122). Each of the Blue Cross and Blue Shield Plans is an autonomous organization with its own staff, organizational hierarchies, and decisionmaking processes (22). Although there are specific standards to which a plan must adhere to be designated as a Blue Shield Plan and a member of the national Blue Cross and Blue Shield organization,[3] the plans vary considerably.

Participation of Physicians.—The concept of participating physicians is a cornerstone of the Blue Cross/Blue Shield plans' philosophy, but there are variations among the plans in applying the concept. Generally, the plan and the physician decide on the payment, without direct patient involvement. In return for agreeing to accept the plan's allowance as payment in full, participating physicians are then paid by the plan rather than by the patient (430). In addition to direct payment by the plan, the non-price incentives for participating in the plans include simplified billing, prompt payment, avoidance of bad debts on covered services, a predictable cash flow, and services of a field staff to handle problem claims (324).

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[2] In the 1930s and 1940s, insurers sometimes negotiated fee schedules with medical societies. The current interpretation of antitrust law requires that schedules be set unilaterally by the carrier (324).

[3] For example, "A member must be endorsed by the State or county medical societies of the area in which it operates, be nonprofit, maintain free choice of doctor, return at least 75 percent of earned subscription income to members in benefits, maintain professional relations and utilization review programs and meet certain financial and reporting requirements" (372).

Physicians agree to participate in a Blue Shield service benefit program either independently or because of a decision made by the physicians' medical society[4] (although individual physicians may then opt out of their society's participation agreement). About three times as many individual agreements are entered into as are medical society endorsements (439). The findings of a 1978 study indicate that interest in being a participating physician in Blue Shield plans is quite high. When individual physicians were given the option of participation, only 28 percent of office-based physicians declined to do so (440). However, the rate of participation is extremely variable among plans. For example, in 1984 only 16 percent of solo physicians participated in Blue Cross/Blue Shield of Florida (45), although the overall participation rate is 70 percent (122).

Although under Medicare a physician may accept or refuse assignment of benefits on a claim-by-claim basis, Blue Shield plans usually require participation on an "all-or-nothing" basis, i.e., the physician's participation agreement requires that she or he accept the plan's determination of reasonable charges as full payment in all cases.

As under Medicare, most Blue Shield plans will also pay for services performed by a nonparticipating physician. However, Blue Shield of Massachusetts cannot, by law, pay nonparticipating physicians, or reimburse subscribers who use them (587). The billing and payment relationship between Blue Shield plans, the subscribers, and the nonparticipating physicians varies. Under some plan arrangements, the nonparticipating physician bills the patient directly, with the plan paying the patient. Under other plans, the participating and nonparticipating physicians are paid on the same basis. Other plans will pay nonparticipating physicians directly if the physician obtains an assignment of benefits from the subscriber (587), but the physician then cannot "balance-bill," i.e., bill the patient for any excess above the plan's allowed charge (122).

Beneficiary Cost-Sharing.—Blue Shield plans traditionally have been associated with the service approach to insurance, that is, the plans guarantee to provide services in full, with subscriber cost-sharing limited to levels based on fee schedule allowances or reasonable charges (122). Recently, however, market demands for cost containment have led to an increased emphasis on plans with copayments and deductibles. Florida Blue Cross/Blue Shield, for example, has found that comprehensive insurance combining the medical service coverage of both basic and major medical service plans with subscriber cost-sharing in the form of deductibles and copayments is more marketable to employers than separate basic and major medical plans. Some plans also offer pure indemnity type plans (22,458).

Methods of Determining Levels of Payment.—Plans vary in the ways they construct a fee schedule. Blue Cross/Blue Shield of Florida, for example, constructs separate fee schedules for each of its charge areas. Relative values are determined from the 90th percentile of Level 2 charges and then multiplied by a separate conversion factor for each charge area to establish a fee (45).

The methodology for determining UCR charge levels also varies. Some plans, e.g., Blue Shield of Pennsylania and Blue Cross/Blue Shield of Florida merge their Medicare claims and private claims in creating Level 1 and Level 2 fee screens. The construction of specialty-specific fee screens is another area of variation. Some Blue Shield plans, e.g., Blue Cross/Blue Shield of Florida, calculate a Level 2 fee screen (customary charges) for all physicians regardless of specialty. Other plans calculate separate Level 2 fee screens for paricular specialties; Pennsylvania Blue Shield, for example, calculates discrete level 2 fee screens for 56 specialties.

The plans also vary from Medicare in how often they update fee screens. Typically the Level 1 (usual) and the Level 2 (customary) fee screens are revised every 6 or 12 months. Indeed, the UCR method of payment is analogous to a floating fee schedule: the maximum amount the insurer pays is updated at specified intervals, and the shorter the interval between updates, the higher the reasonable fee (22).

Medicare's Medical Economic Index has a parallel in the Blue Cross and Blue Shield Association's membership standard that suggests controlling the Level 2 (customary) fee screen. Some plans employ the rate of increase in the Consumer Price Index as a cap on the Level 2 fee screen, a few plans use other indices (324), and other plans do not use any control on customary charges (45).

Commercial Insurance Companies.—At the end of 1981, more than 1,000 private insurance companies, mostly for-profit proprietary companies or subscriber-owned mutual companies, were estimated to be offering individual or group health insurance covering over 108 million persons (201). Unlike the majority of Blue Cross and Blue Shield plans, which provide only health benefits coverage and other health-related services, most commercial firms sell other types of insurance as well. In fact, life insurance is the main line of business of the major companies in the commercial health insurance field (587).

Moreover, commercial insurers do not have a system of participating physicians. The large number of commercial insurers and the lack of standardization in claim forms and benefit programs among insurers make it difficult for physicians to deal with individual companies. Rather, the physicians bill the patients, who must then obtain reimbursement from the insurance company (587).

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[4] This agreement, in order to meet antitrust regulations, must not have anything to do with price setting (122).

Like Blue Shield, commercial insurers use both fee schedules and the UCR methodology in determining physician payment levels. However, most commercial insurers do not differentiate payment levels by specialty. The physician payment methodology is often part of the specifications of group policies. When selling group policies, the insurer either bids on a series of benefits and specifications designed by the prospective buyer or plans a group's health and welfare program based on the needs and resources of the buyer.

Large insurance companies, such as the Metropolitan Life Insurance Co. and the Prudential Insurance Co. generate their own data base on which to base levels of physician payment. Smaller companies usually do not have sufficient claims on which to base a credible[5] payment level and often depend on other sources for guidance. One such source is provided by the Health Insurance Association of America Prevailing Healthcare Charges System, which collects, compiles, and publishes data on charges for surgical procedures by physicians (200). Some of the larger insurance companies, e.g., Metropolitan Life Insurance Co., use the surgical charge program as a "back-up" source in responding to physician questions about payment level, or if the number of claims on which to establish a credible prevailing charge is insufficient (303).

Both Blue Cross/Blue Shield and commercial insurers are providing new types of insurance coverage through the development of preferred provider organizations (PPOs) (see table 7-5 in ch. 7). Payment of physician's services under PPOs through negotiated discounts from the physician's charges or through negotiated fee schedules has added a new source of variation in the methods of payment available under private health insurance plans. In addition, these plans usually provide incentives to the enrollee to obtain care from preferred providers by reducing levels of cost-sharing for care from those providers. However, since many groups other than insurers are also currently involved in the development of PPOs, they will be discussed in greater detail later in this appendix.

Self Insurance.—An increasing number of employee benefit plans and other organizations are self-insuring, i.e., they underwrite their own benefits coverage with a budget funded by the organization. Plans can either self-administer or hire an outside firm to process claims and to perform other administrative services. In either case, the plan prospectively determines its medical expenditures for the year. If costs are lower than projected, the plan retains the savings, and if costs are higher than estimated, the plan absorbs the loss. In order to protect against high or unexpected costs, most self-funded plans re-insure their plan, i.e., purchase "stop-loss" insurance that takes effect when a claim for a specific individual exceeds a predetermined amount and when the overall costs of the plan are higher than a prespecified amount.

The growth of self-insurance in the past few years has been dramatic, although estimates of market share vary. The Society of Professional Benefit Administrators, the national association of independent third-party contract benefit administration firms, estimates that for mid-1984 commercial insurance company fully insured policies have 20 percent of the market for health benefits coverage, Blue Cross and Blue Shield Plans have 35 percent of the market, and self-funded plans have 45 percent of the market. The self-funded statistic includes plans administered by third-party administrators, self-administered plans, and administrative services only arrangements administered by insurance companies (230).

Both the commercial companies and Blue Cross and Blue Shield Plans are responding to this potential loss of market share by contracting to administer self-insured plans for self-funded organizations (149). The Health Insurance Association of America, measuring a subset of self-funded plans, in the form of administrative services only arrangements and minimum premium plans provided by commercial group insurers, has estimated that prior to 1979 only 5 percent of total insurance company group coverage was self-funded insurance. By 1980, these types of arrangements represented approximately 25 percent of total insurance company group coverage; by 1981, they represented 30 percent of such coverage (201).

Innovative Private Sector Approaches to the Provision of Health Services

Historically, the function of insurance has been to protect individuals from the risk of financial ruin from actuarially predictable untoward events by providing either cash or service benefits to enrolled beneficiaries. Private insurers sought business from large purchasers of group insurance, such as employers, by designing insurance packages, including payment methods, to fit the specific requirements of the purchaser in protecting the beneficiaries from such risks. In fields of insurance other than health, competitive pressures to provide the greatest amount of protection at the lowest price force insurers to initiate actions that will reduce the number and cost of catastrophic events (e.g., risk management techniques used by liability insurers) (171). Yet, until recently, most purchasers of health care have not been interested in demanding alternatives to traditional forms of insurance which would reduce their costs for care (417,454). In the absence of demand, private insurers rarely made initiatives to control costs on their own.

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[5] The credibility of a payment level has legal implications. When the insurer claims reimbursement will cover reasonable fees, or when the insurer claims reimbursement will not create excess physician billing of the patient for charges in excess of the insurer's approved charges, an insurer has to be able to defend the payment methodology as well as the amount of payment if a provider questions an insurers' payment.

One reason suggested for the previous lack of interest in cost containment among insurers and purchasers of insurance is that the potential variability among services and in patient need make it difficult for third-party health insurers to identify discrete episodes with predictably finite costs whose risks and costs they can then work to reduce (157). To ensure that the care delivered during a hospital stay, for example, is as efficient as possible or to ensure that the care delivered during that stay is rendered in the most efficient site (which may not be in a hospital at all) requires that the third-party payer move beyond the financial function of insurance to develop a system for monitoring and controlling the provision of care itself.

Rapid growth in the cost of insurance premiums to employers has focused their attention on finding alternative, less costly ways of providing care to their beneficiaries. The increase in the number of self-funded plans, for example, is one example of the response of corporate purchasers of health care to rapidly increasing premiums. The private sector is also adopting innovations in the provision of health benefits for employees that may be viewed as stages in the evolution of various managerial technologies for the provision of health care. The remainder of this appendix will describe each of these approaches in turn:

- approaches directed at the *beneficiary*'s choice of medical provider and site of treatment, e.g., changing benefit packages to increase beneficiary cost-sharing or to cover particular services in preference to others;
- approaches directed at medical care *providers*, such as systems of utilization review to monitor the cost, choice, and use of hospital and ambulatory services;
- development of alternative provider *arrangements*, such as HMOs and PPOs; and
- development of *coalitions* of health care purchasers to coordinate activities on a local or regional level.

In addition, private sector payers have established other approaches to containing health care costs, such as health promotion and awareness programs, e.g., corporate "wellness" programs that encourage health-enhancing behavioral changes in employees in hopes of lowering the groups' utilization of services. Although these efforts may have an effect on health care costs by lowering the demand for medical services (with as yet unknowable effects on the unit price of such services), they are not germane to our discussion of alternatives for the payment of services when the demand for them actually occurs.

To date, research to establish the effectiveness of these changes in private sector policy in controlling aggregate health care costs has been scant, and the evidence available is mostly anecdotal. Companies have noted individual savings in their insurance premiums (or, in the case of self-funded companies, their benefit payouts). In a 1984 survey of corporate benefits officers and senior executives of corporations with more than 500 employees, executives of companies who reported changes in their benefit plans to control costs estimated that the changes in health care plans their organizations had instituted had saved between 16 and 18 percent over the last 3 years over what their costs would have been (273). Independent confirmation of these estimates is not available, however.

Nevertheless, the changes in corporate health benefit plans are worth examining as a type of natural experiment in alternative payment for health care and physician services. The very success or failure of those attempts may affect the overall market for physician services in which Medicare must participate. The response of the system to these innovations may be instructive in designing changes in Medicare payment. Changes in Medicare reimbursement may complement these changes in the private sector, having a synergistic effect on controlling health costs. It should be noted, however, that these lessons from the private sector in changing benefits apply to a working population. Whether those results may then be applied to an aged Medicare population is a question for further research to answer.

Managing the Provision of Benefits To Change Beneficiary Incentives

The redesign of health insurance benefit packages to modify beneficiary incentives to seek less costly forms of medical care has two facets. One is to increase employee awareness of the costs of treatment choices by increasing the level of costs the employee must pay out-of-pocket for that care. The other is to encourage or mandate particular providers of care or modes of treatment that are believed to reduce costs.

Increasing Beneficiary Awareness of Costs.—Increasing beneficiary cost awareness is not per se an alternative method for reimbursing physicians. Yet, the level of coverage a beneficiary receives under his or her insurance plan is an influential factor in the decision to seek the medical care. Health services researchers have noted that the existence of insurance, while perhaps sparing the individual the risk of financial ruin in the event of illness, also serves to insulate the individual and the physician from considering the direct financial consequences of their joint or separate treatment decisions (342,365).

Increasing Cost-Sharing.—Unlike Medicare, patient cost-sharing in the form of a deductible amount and coinsurance generally has been characteristic of only part of the insurance coverage offered by private insurance, i.e., major medical insurance. The deductible amount usually takes the form of an absolute amount, or very rarely a fixed percentage of income, and may be applied on an illness, a person, or a family basis (587). Recently, there has been a trend for large businesses to incorporate some form of cost-sharing in all the insurance that they offer their employees (149).

There are a number of reasons why corporate benefits plans may wish to increase the portion of the cost of health care borne by beneficiaries. Increasing cost-sharing is believed to be relatively easy to implement and administer (209). All other things being equal, sharing more of the costs of care with the employee immediately lowers the costs of care being borne by the company and therefore its health insurance premiums.

A second aspect of increased cost-sharing is that it will cause the beneficiary to consider more carefully whether or not to initiate an episode of care. Thus, increased cost-sharing reduces not only the expenditures of the third party, but also aggregate health care expenditures. Insurers who were asked to estimate the savings resulting from various cost-sharing requirements said that increasing the deductible from $0 to $500 would save an estimated average of 20.8 percent in claims, and a coinsurance rate of 30 percent would save an estimated 27.5 percent in claims compared to a zero percent coinsurance rate (209). Empirical data from the Rand Health Insurance study seem to confirm this; adult beneficiaries with first-dollar coverage of health care were found to use significantly more health care services than those who paid some coinsurance or deductibles (343).

Because of these cost advantages, corporate benefit plans have increased the level of cost-sharing borne by individual employees. One recent survey found that 50 percent of a sample of corporations employing 500 or more employees increased deductibles in the past 3 years, and that 22 percent of those corporations instituted copayment on medical bills (273). Another survey found 71 percent of 150 companies surveyed raised the amount of deductibles, 53 percent increased the level of coinsurance, and 44 percent increased the employee's share of the premiums paid (147). A 1983 survey of companies found that 48 percent were introducing or increasing cost-sharing for their employees (25). Public sector employers were relatively less strict in increasing employee cost-sharing than private sector employers. According to survey data, 30 percent of public sector employers have increased their deductibles, although they are still relatively low. Plans with deductibles of $150 or less covered 65 percent of salaried public employees and 55 percent of hourly public workers, compared with 43 percent of all workers in the public sector (577). Employers were found to be four times more likely to use deductibles over $100 in 1984 than in 1982, and that plans which covered all costs after meeting the deductible declined from 67 percent in 1982 to 42 percent in 1984 (307).

The Medicare Part B program already imposes 20-percent coinsurance on the beneficiary, while many private benefit plans are only beginning to approach that level. In 1982, 25 percent of employer group health insurance plans had a 20-percent beneficiary coinsurance rate for inpatient care, while in 1984, the proportion increased to 43 percent (307). Although the effect of Medicare coinsurance may be mitigated by Medigap coverage, lower income elderly persons may not carry Medigap coverage if they feel they cannot afford the additional premium. Further, there is substantial evidence that the imposition of cost-sharing has disproportionatly negative effects on utilization of health services by persons of lower income (483). In addition, since the elderly are greater users of medical care, it is believed that substantial increases in beneficiary cost-sharing would thus likely come at the cost of reduced access for Medicare beneficiaries (486).

Positive Incentives To Reduce Utilization.—An alternative to directly increasing the costs of care borne by the beneficiary is to create positive financial incentives for the beneficiary to constrain utilization. An example of a direct positive incentive would be a bonus that is paid to a beneficiary if he or she does not submit any claims. Such incentives may be perceived by employees as less harsh because the person deciding to initiate care may be in dire need of that care and perhaps should not be forced to expose his or her own resources to risk. Alternatively, indirect incentives, such as flexible benefits plans, in which the employee can choose his or her level of health coverage and take some or all of the employer's contribution as cash compensation, are also being tried in hopes of lowering the employer's expenditure on health care coverage.

The use of positive financial incentives for employee beneficiaries to reduce their use of health services is not nearly so common as increasing the level of financial risk borne by the employee. Neither is it known how effective such positive incentives would be in reducing utilization.

Positive incentives usually come in the form of a cash bonus given to employees for not using any services during the course of the year. Alternatively, the employer establishes a fund in the employee's name to which the employer makes contributions, which can be used to cover medical cost-sharing or which can be carried over from year to year and used when needed, while any balance can be withdrawn on retirement (153). However, the Internal Revenue Service has recently challenged the tax-free status of such benefit accounts, declaring that the funds in the account must be spent within a calendar or fiscal year (448). A.S. Hansen, Inc., found that only 10 percent of its surveyed companies had instituted such incentive plans (25).

A related system of positive incentives to reduce utilization is found in so-called "flexible benefits plans," also known as cafeteria benefits plans, in which employees choose between types of insurance coverage available. One type of flexible benefits plan establishes a "flexible spending account" to which employees contribute pre-tax income as a type of voucher with which they can purchase benefits from a range of options offered by a company. Many employees participating in these accounts have exhibited a preference for greater disposable income rather than for health insurance plans with reduced cost-sharing. The Employee Benefit Research Institute found that health insurance deductibles in these plans averaged $207, versus a nationwide average for all firms of $100 (127).

Directing Beneficiaries' Choice of Treatment and Providers.—Health insurance benefits plans are becoming more innovative in the management of their employees' benefits outside the scope of traditional insurance coverage. As was discussed earlier, to direct and manage the provision of health care is a step beyond the insurers' function of providing protection against financial ruin. Several approaches used include the following:

- encouraging or requiring second opinions for nonemergency surgery;
- encouraging or requiring the provision of certain types of surgery and routine laboratory tests on an ambulatory basis; and
- educating employees about and channeling them to efficient providers—i.e., case management.

Second Opinions for Surgery.—There are three types of second surgical opinion programs, varying in the level of coercion involved: the passive reimbursement of second opinions obtained at the initiative of the beneficiary, the active promotion by the company of second surgical opinions, and the requirement that the beneficiary obtain a second opinion for all elective surgery (149). Second surgical opinion programs of any type are among the most common of the private sector cost containment activities directed at beneficiaries. A survey of Fortune 500 companies revealed that 71 percent had some sort of second opinion program, 64 percent have a penalty associated with failure to obtain a second opinion, and 50 percent mandate that employees use the program before surgery (160). Another survey found that 54 percent of a sample of employers began a mandatory second opinion program in the past 3 years (273). Public sector employers were found to be less likely to use strict second opinion programs with 27 percent having mandatory programs, and 32 percent having only voluntary programs (577).

There is still some controversy over the cost-effectiveness of second surgical opinion programs. It is believed that obtaining the concurring opinion of a second, disinterested physician in the necessity for a surgical operation can help to screen out cases for which indications are weak and that may be amenable to less drastic alternative treatments (62). One study found that the mandatory second surgical opinion programs studied exhibited a cost-benefit ratio of 2.63:1 (i.e., $2.63 was saved for every $1 spent to administer the program), while voluntary programs were less effective in reducing costs (146). Some recent studies have determined that 14 to 16 percent of proposed surgeries submitted to second opinions were not confirmed (62). However, one cannot conclude that those nonconfirmations are indicative of unnecessary surgery. Such nonconcurring opinions may often advise delaying surgery, or pursuing medical rather than surgical treatment, and may eventually be followed by the surgery originally proposed (373). At the same time, it is not known whether delay may result in more complicated surgery later (62). The Congressional Budget Office estimated the benefits of a mandatory second surgical opinion program to Medicare at about $80 million (418). The American College of Surgeons said that "it seems only prudent to consider the alleged advantages of the second-opinion concept as unproved and to postpone widespread implementation of programs" (10).

Ambulatory Surgery and Testing.—The provision of medical services on an ambulatory rather than on an inpatient basis is also being encouraged by employee health benefits plans. Of the companies responding to the Louis Harris survey, 47 percent had initiated financial incentives of the provision of surgery and testing on an ambulatory basis (273). Gardner, et al., found that 82 percent of Fortune 500 companies were encouraging ambulatory surgery where possible, and 79 percent were encouraging ambulatory testing (160).

It is difficult to distinguish on the basis of these surveys what is meant when it is said that an employer will encourage ambulatory care. Encouragement can be either active or passive; there has been no systematic collection of data on the extent to which private third-party payers simply reimburse for or actively encourage ambulatory surgery testing. Although some insurance carriers maintain lists of procedures that will be reimbursed only on an ambulatory basis, others simply provide information about the availability of the coverage without taking an active role in encouraging it. Some carriers have tried to increase the incentive for physicians to perform ambulatory surgery by increasing the level of reimbursement to physicians for performing surgery on an ambulatory rather than on an inpatient basis (149).

Case Management.—In case management programs, an agent is assigned to the beneficiary to direct and coordinate the provision of medical care for that beneficiary. Although a case manager may be a physician or other provider of care whose services are engaged by the beneficiary directly, in this context case management refers to an agent employed by the corporate benefit plan who arranges and directs the provision of care for the beneficiaries of that plan.

The expertise of a case manager is intended to help employees make choices among less costly providers and services and to reduce the cost of care. At the same time, the use of a case manager involves a considerable amount of overhead for the sponsoring plan. Although a few corporations maintain case management teams in-house, most of those using case management programs contract with outside consultants for services. Costs of case management programs are said to run about 1.2 percent of the level of claims. It is not a commonly used method for managing beneficiary incentives. One survey found that only 1.3 percent of surveyed companies used case management techniques in 1983, although the case manager approach was seen to be growing rapidly (207).

Management of Provider Behavior: Utilization Review

By monitoring the process of care-giving according to some defined standard, utilization review attempts to manage provider behavior in the provision of care to assure the appropriate use of the plan's resources for the protection of the plan's beneficiaries and of the financial well-being of the plan.

Utilization Review: Types.—The focus of most review programs conducted by private insurers, third-party administrators, and self-funded employee health benefit plans is on services rendered in a hospital, since those services are the most expensive and the payoff to monitoring services in that site is greater. However, utilization review could be performed in an ambulatory care setting, although it would be likely to be more costly because the site base is so diffuse. Utilization review, as currently used, can be divided into particular types based on when they apply to the patient: preadmission review (requiring approval before an elective admission to a hospital), concurrent review (during the hospital stay), and retrospective review (after discharge from the hospital).

Utilization Review: Sources.—Numerous types of private sector organizations provide utilization review for health benefits plans, either under contract to a number of different plans or as a part of the business of providing health insurance benefits (149). Foundations for medical care and peer review organizations are organizations providing utilization review services that are usually sponsored by physicians and are geographically restricted. They have the advantage of having closer relationships with local providers and may thus have a greater ability to elicit cooperation with the goals of utilization review. Corporations also contract with independent commercial utilization review organizations and with third-party administrators for utilization review services (437). Insurance companies are also developing utilization review programs to meet the competitive challenge of the other organizations (172). The latter three need not be restricted to a particular locality, but may provide services nationwide. Lastly, some employers will organize utilization review programs in-house rather than contracting with outside organizations.

Cost-Effectiveness and Prevalence of Utilization Review.—Empirical assessments of the cost-effectiveness of review programs conflict. Studies performed have usually had methodological flaws that have made it impossible to draw conclusions about the effectiveness of particular programs (142,149). Nor has evidence as to effectiveness of utilization review with regard to Medicare beneficiaries been made available (111). However, anecdotal data available from some companies' benefit plans report savings in expenditures of 7 to 22 percent resulting from utilization review programs, at a cost of about $1 to $2 per employee per month (142,361). Others have found that the total costs of care have increased in spite of utilization review mechanisms that constrain utilization. One large company found that its utilization review program re-

Table D-2.—Surveys of Use of Utilization Review Mechanisms Among Employee Benefit Plans

	Percent of employers using method					
Mechanism	Gardner, et al.[a] (1984)	A.S. Hansen, Inc.[b] (1983)	Louis Harris & Associates[c] (1984)	Hewitt Associates[d] (1982)	(1984)	Mercer-Meidinger[e] (1985)
Preadmission certification	32%	10%	28%	2%	26%	26%
Concurrent review	41	14	NR[f]	8	34	30
Retrospective review	NR	17	NR	18	40	
General utilization review programs; type unspecified	68	48	27			

[a] Universe of Fortune 500 companies, sample and respondents unspecified.
[b] Sample and respondents unspecified.
[c] Programs begun in last 3 years; sample of 1,250 companies with 500 or more employees.
[d] Sample of 1,185 companies.
[e] Sample of 256 public employers surveyed in May 1985.
[f] NR = Not reported.

SOURCES: S.F. Gardner, J.B. Kyzr-Sheeley, and F. Sabatine, "Big Business Embraces Alternate Delivery," *Hospitals* 59(4):81-84, Mar. 16, 1985; A.S. Hansen, Inc., *1983 Benefits Survey* (Lake Bluff, IL: A.S. Hansen, Inc., 1984); Louis Harris & Associates, *Corporate Initiatives and Employee Attitudes on Cost Containment* (New York: The Equitable Life Assurance Society of the United States, February/March 1985); Hewitt Associates, "Company Practices in Health Care Cost Management—1984," quoted in J. Goldsmith, "Death of a Paradigm: The Challenge of Competition," *Health Affairs* 3(3):5-19, Fall 1984; and William M. Mercer-Meidinger, Inc., *Healthcare Cost Containment in the Public Sector* (New York: William M. Mercer-Meidinger, Inc., 1985).

duced corporate wide inpatient utilization by 46 percent over a 5-year period; yet its hospitalization costs per person covered increased 60 percent in that same period (52). (One cannot be certain that costs would not have risen even further in the absence of the company's utilization review program, however.) In spite of equivocal evidence, the use of utilization review in the private sector has been expanding among larger employee benefit plans. Table D-2 summarizes some recent survey data on the prevalence of various utilization review methods.

One reason cited by companies for the use of utilization review programs is that, rather than being considered a cost-saving practice in itself, it is seen as a method for collecting provider-specific utilization data that can later be used as a bargaining tool for negotiation of preferred provider arrangements and other alternative health care systems (149) (see discussion below). Still, it is believed that utilization review programs possess a great deal of potential for reducing the costs of care, simply because the known degree of nationwide variation in use of services suggests that reductions in utilization are possible without a loss in quality of care (208). A utilization review program can call attention to patterns of care that fall out of line with established norms, and may educate providers in how their practice patterns diverge from those of others. Another reason for the use of these programs may be a belief in the so-called "sentinel effect," which holds that the process of review need not necessarily call particular episodes of care into question. Rather, the fact that the review process exists at all will cause providers to behave more cautiously in prescribing care.

There is a further difficulty in instituting and coordinating utilization review programs, particularly for corporations doing business nationwide. Medical service data are not collected in any systematic fashion throughout the country, making it difficult to calculate and compare plan use with nationwide norms for care. Providers have been unwilling to cooperate with utilization review programs in the past, although that reluctance is lessening as providers come to believe that it is in their own best interests to cooperate (149).

Development of Alternative Provider Arrangements

Alternative provider arrangements place the choice of treatment in the context of a system for the provision of care. Although individual treatment choices may still be left to the discretion of the patient and the provider, the presence of a superceding organizational structure may force the provider to account for the economic trade-offs between different treatment choices, if the success of the organization is predicated on the ability to deliver health care in a more cost-conscious manner.

Types of Alternative Provider Arrangements.—Although alternative provider arrangements derive from numerous sources, including hospital/physician joint ventures, insurance companies, and consumer groups, corporate benefits plans have recently become leading figures in the establishment of alternative provider arrangements. The major types of alternative provider arrangements considered in this appendix are PPOs and HMOs. Although health maintenance organizations have been in existence for nearly 50 years and have been extensively studied (see ch. 7), PPOs are a newer form of alternative provider arrangement that has not been extensively studied. Nevertheless, PPOs have attracted attention because of their potential for creating financial incentives for beneficiaries to choose cost-effective providers.

Preferred Provider Organizations (PPOs).—PPOs include a diverse array of arrangements between a third-party payer and providers of health care, including physicians, hospitals, or both. Estimates of the number of PPOs differ. In January 1985, the American Association of Preferred Provider Organizations identified 143 operational PPOs in 28 States and the District of Columbia (7). According to the Institute for International Health Initiatives, as of June 1985, 229 PPOs were operational, 67 were defined as preoperational, and 38 were of undefined status, in a total of 35 States (237). A conservative estimate of the number of persons enrolled in PPOs in June 1985 was about 5.8 million, a fourfold increase from a December 1984 enrollment estimate of 1.3 million (382). PPOs vary in a sponsorship, membership, and payment methodology. As of June 1985, most PPOs had been sponsored by providers, with 52.3 percent having been sponsored by physicians, hospitals, or physician/hospital joint ventures. Insurance companies and Blue Cross/Blue Shield plans supported 16 percent of the total (237).

Physicians providing services under the auspices of a PPO generally agree to fee-for-service reimbursement at some discount from their customary, prevailing, and reasonable charges, although arrangements have included reimbursement according to a fee schedule or on a capitation basis. Of those PPOs responding to the survey, 29 used a relative value scale, 23 used a fee schedule, 18 used individual provider discounts, 18 used "modified fee for service," 3 used gatekeeper reimbursement, and 3 used capitation (7).

Among the characteristics that may be involved in a PPO, those features that distinguish it from other types of payment plans are: 1) that the providers agree to accept payment for medical services at some discounted rate, and 2) that providers are willing to accept the scrutiny of utilization review programs in the provision of care. PPOs are believed to be making increasing use of utilization review programs, although most of the efforts at utilization review so far have concentrated on inpatient rather than ambulatory care (382). A 1984 survey showed that of the operating PPOs responding to the poll, 83.1 percent used precertification of admissions, 63.4 percent used discharge planning, 57.7 percent used concurrent review, 54.9 percent used retrospective review, and 35.2 percent used second surgical opinions (425). The Institute for International Health Initiatives found that 73 percent of its respondents had preadmission certification, 74 percent had concurrent review, 66 percent had retrospective review, and 43 percent had mandatory second surgical opinion programs (237). These results suggest that PPOs use utilization review programs more frequently than traditional employee benefit plans (see table D-2).

One example of a PPO developed by a private insurer is one sponsored by Blue Cross/Blue Shield of Florida (45). Its strategy involves agreements with selected hospitals that have a reasonably low payment level based on the hospital prospective payment system of diagnosis-related groups (DRGs). If a hospital agrees to participate, Blue Cross/Blue Shield of Florida will then negotiate a DRG contract with it and request the hospital's assistance in signing its medical staff for the PPO.

For the PPO program, the plan has divided the State into four regions. A fee schedule based on 90 percent of the average billed charges for 1983 is being developed for each of three regions. If a physician agrees to become a preferred provider, he or she will accept the lower of his or her billed charges or the scheduled fee. The physician also agrees to a system of preadmission certification, certain locally determined surgical procedures requiring to be performed on an ambulatory basis and a medical necessity retrospective review of claims. In return, Blue Shield promises to review, but not necessarily update, the fee schedule annually.

A different method had been designed for determining the level of physician payment for physicians in the southern region of Florida, which differs markedly from the other regions in numbers and types of physicians and beneficiaries. For the southern region, a UCR fee schedule is being developed that is based on the 75th percentile of the physicians' 1983 billed charges. Since the 90th percentile is used for determining the reasonable charge for the plan's traditional business, basing the payment on the 75th percentile assures a discount. The payment is tailored to each physician's charges as contrasted with the regionwide fee schedule described above, since each physician will be paid the lowest of the usual, billed, customary, or reasonable charge.

Health Maintenance Organizations (HMOs).—HMOs are organizational entities that accept payment for the provision of medical services on a per-enrollee capitation basis. The HMO makes arrangements with a panel of physician and hospital providers to provide services to those enrollees, and bears risk for the costs of services in excess of the capitation payment. Except in an emergency or with prior authorization, the enrollee is required to obtain health care services only from those providers with whom the HMO has contracted to obtain care. HMOs increased from 39 to 337 between 1972 and 1984, and the number of subscribers increased from 3.5 million to 16.7 million (240). In 1983, roughly 40 percent of HMO members were in one of the Kaiser plans (239).

Commercial insurance companies are actively involved in a growing segment of the HMO industry, "national HMO firms," which are firms that own or manage separate HMO firms in two or more States (239). Commercial insurance companies sponsored about 10 percent of HMO plans in 1983, which enrolled 11 percent of HMO clients (239).

Potential for Cost Savings.—PPOs can be seen as a competitive response by insurers and health care providers jointly to market their services as a unique "product" that may be superior to others' services because it is less expensive on a per unit basis, or, more importantly, less expensive in aggregate because of the efficiency of the providers. Beneficiaries enrolled in the PPO are encouraged to use PPO services by benefitting from reductions in cost-sharing. However, their choice of caregiver is not restricted to these preferred providers; they may choose any other provider outside of the arrangement as long as they pay the applicable deductible and coinsurance.

Preferred providers who simply offer to discount the price of their services while recouping their losses through expanding their volume of services do not offer the same cost savings as preferred providers who both discount their services and maintain strict efficiencies in the provision of their services. Few existing PPOs maintain the necessary sophistication of data collection, however, and the record of PPOs in constraining costs has not been evaluated (52). Nevertheless, many believe that the development of more sophisticated information systems and utilization review mechanisms will allow PPOs to distinguish truly efficient providers and offer their services to the marketplace as a distinct medical product.

Development of Health Care Coalitions: Cooperative Ventures in Health Care Cost Containment

Coalitions have evolved on a regional basis to address some of the unique variations in health care utilization. Although the name "coalition" connotes the ideal of a merger of a broad range of interests in the health care field, up to this time coalitions have been organized largely by employers (308). Estimates of the number of coalitions differ. The U.S. Chamber of Commerce reported that in 1984 there were 135 coalitions with 6,500 members, an increase of 14 percent from the year before (380). The American Hospital Association found 151 coalitions operating in 1984, with an additional 14 in the development stage (12, 381). This was an increase of 13 percent from the year before.

Coalitions, though perceived by some as underrepresenting some of the responsible parties in health care cost containment (308), do provide a mechanism for participating corporations to cooperate in the pursuit of specific goals defined by the membership of that particular coalition. To the extent that the coalitions have unique goals specific to the conditions of the health care market in their regions, the members establish their own criteria for success and predicate the continued existence of the coalition on those criteria (149).

Among these goals is the development of provider-specific utilization data systems, which are crucial to the identification of efficient providers. Having identified these providers, one can construct an alternative, cost-conscious provider system. According to U.S. Chamber of Commerce figures, 80 percent of the coalitions are involved in such activities (380). The American Hospital Association found that 71 percent of the respondents to its survey of coalitions were involved in the development of data systems (12). Coalitions have served as foci for political action in attempts to change local and State regulations in order to foster a more competitive market for health services, and have been instrumental in establishing State all-payer rate-setting regulations in Massachusetts and Connecticut (73,208). Other coalitions have served as a mechanism for employers to establish alternative provider arrangements. According to the U.S. Chamber of Commerce, 70-percent of existing coalitions are active in developing such arrangements (380). According to the American Hospital Association, 44 percent of coalitions responding to its survey were active in developing alternative provider arrangements (12).

Conclusion

The pace of change in the private health insurance market has become very rapid, as the industry has responded to the demands of its customers to provide new approaches to financing and providing health care. Many of these changes in the financing and provision of care are too recent to evaluate for their effectiveness in reducing costs while retaining quality of care. Corporate benefits managers are taking on the role of being the informed buyer for their employees/beneficiaries amid the plethora of new alternatives in insurance coverage and alternative provider arrangements. Nevertheless, individual insurance beneficiaries will require greater access to information in order to make rational choices about the purchase of health care (483).

The lessons learned from the private insurance industry in the provision of health care relate to changes in payment to physicians under the Medicare program, but results from that experience should be applied with caution. The effectiveness of many private sector initiatives in controlling costs and preserving quality is unknown. In addition, there are distinct differences between the populations covered by Medicare and those covered by private insurers. Further research will be required on such issues as:

- Does increased cost-sharing cause beneficiaries to forgo necessary health care and result in greater expenditures later?
- How effective are various forms of utilization controls in assuring cost-effectiveness and quality of care?
- How effective are PPOs in restraining costs?
- To what extent can the experience of private sector insurers in providing care for their beneficiaries be duplicated for public sector beneficiaries? (368).

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